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DE RE RUSTICA

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h. a. dec.



PREFACE

This book was written in the years 1964–66 when I was lecturing in ancient history and classics at the University of Copenhagen. I am in great debt to the University for giving me a sabbatical term from February to August 1965, and especially to my two superiors, Professor Dr. Povl Johs. Jensen and Professor Dr. Axel E. Christensen, for their aid and support to me when applying to the authorities of the University.

Many years earlier I was introduced to the art and science of practical agriculture by friends in the Danish countryside, the Davidsens. It would indeed have been impossible for me to understand the problems of agriculture without this background, and I shall never forget the hospitality and patience with which I was always received.

To many friends I owe special thanks for their readiness to discuss matters and problems connected with the present work. Especially I should mention Lecturer Palle W. Nielsen, Professor Dr. Johnny Christensen, Dr. J. Raasted, M. A. Chr. Marinus Taisbak, and M. A. Jens Vind, the latter taking the troublesome task of reading the MS at an early stage.

Translator Mrs. Lisbeth Havrehed has translated my often difficult Danish MS. into English. It is not her fault if the language does not always sound quite like English. Having the choice between rewriting the book entirely in the new language or trying to render the Danish book in an English as proper as possible, we have chosen the last solution. Mr. A. Drummond B. A., a member of the British School at Rome, has kindly read the final MS. and removed not a few obscurities. The responsibility for any mistakes is, of course, my own.

I should like to mention that great help with typewriting was given by Mrs. Grethe Christensen and Mrs. Margit Jørgensen of the Historical Institute of the University of Copenhagen. My mother and my wife have given me their indefatigable and altruistic aid in proofreading the MS. at various stages. Without this the present book would never have reached the final stage.

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Jens Erik Skydsgaard

INTRODUCTION

It may seem strange that the rich crop of literature on Varro in recent decades [1] does not include a monograph on the only extant, complete work by the learned polyhistor: *Rerum Rusticarum Libri Tres*. To some extent, the numerous titles of Varro's lost writings seem to have blinded scholars' eyes to what has survived. Admittedly, most scholars would, no doubt, have preferred any of the works mentioned in Hieronymus' catalogue [2] to the treatise on agriculture, but this does not alter the fact that this treatise is the only one we possess, and that it ought to form the starting point for all research into Varro. Only in this work can we see how "the most learned of all Romans" treats a subject, and the mere fact that practically all the ancient tradition has, so to say, been sifted by Varro, in itself justifies a study of the treatise.

One of the most outstanding scholars of Varro in our time, Hellfried Dahlmann, has described the situation with these words: "Eine der wichtigsten und zugleich reizvollsten Aufgaben der Varroforschung ist es, die Rekonstruktionen seiner verlorenen oder nur noch in Trümmern erhaltenen Werke zu versuchen" [3]. However, in his article on Varro in the *Realencyclopädie* the same scholar said: "Über Inhalt, Form und Aufbau der r. r. ist nur wenig geschrieben worden" [4].

Although Dahlmann in his article touches upon many of the most important questions, they cannot, of course, be considered finally answered thereby. An important work of 1952, Heisterhagen: "Die litterarische Form der *Rerum Rusticarum libri Varros*" [5], is exclusively concerned with the external features of the treatise. The basically most interesting problem, viz. the great polyhistor as a scholar, is not dealt with. Nor does Manfred Fuhrman answer the question in his excellent book, "Das systematische Lehrbuch" [6]. Obviously, a book the aim of which is to describe the ancient textbook as a literary genre, cannot discuss in

1. For bibliography I refer to *Entretiens sur l'Antiquité Classique* (Tome IX, 1962), Varron (henceforth referred to as "Entretiens"), pp. 209 sqq., and Jean Collart: *Varron, grammairien et l'enseignement grammatical dans l'antiquité romaine 1934-63* (*Lustrum*, vol. 9, 1964) pp. 213-41.
2. For the catalogue, cf. F. Della Corte, *Varrone* (Genova 1954), pp. 259 sqq.
3. *Entretiens* p. 3.
4. Pauly-Wissowa, *Realencyclopädie der classischen Altertumswissenschaft*, Neue Bearbeitung (henceforth referred to as RE), Suppl. 6 (1935), col. 1184.
5. Typewritten dissertation (Marburg 1952). This work has been used, but no references are made to page numbers, etc.
6. Göttingen 1960. For the treatment of Varro, cf. esp. pp. 69 sqq.

detail the scientific value of every individual textbook—nor is this what the author has in mind. In spite of the fact that Fuhrmann's book anticipates many of the observations to be made in the following, it is to be hoped that the present work is sufficiently justified by its intention, which differs from that of Fuhrmann. This work is not an evaluation of the agricultural treatise as literature, but as a branch of science, the Roman science of agriculture.

This aim places the writer at variance with Dahlmann's gnome: "Der Varroforscher darf zuwenigst ein Spezialist sein" [7]. Certainly, Varro was a polyhistor who mastered practically all the sciences of his day. This was possible at a time when scientific literature had not yet grown out of all proportion—but this is, of course, not the only explanation. To his contemporaries, Varro seemed something of a phenomenon; "vir ingenio praestans omnique doctrina", says Cicero (Brutus 205), and only by dint of his great industry did he achieve that mastery of all the sciences which made him the main source for writers of the following centuries. Such an almost insatiable thirst for knowledge, for which we might compare the younger Pliny's description of his uncle [8], is not often met with nowadays and will probably be the exception at any time. Therefore, to demand of the student of Varro that he be not a specialist, but—like Varro—a polyhistor with some knowledge of all the fields Varro covered, is a serious demand indeed. Yet only such a man will be able to attain a profound understanding of Varro's genius and importance.

The present writer would like to point out from the beginning that such is not his aim. In the case of a large number of Varro's other writings, Dahlmann's axiom may well be true. The traditional *Alttertumskunde* comprises most of the disciplines covered by Varro, but agriculture is in our days clearly a peripheral subject. On account of our modern social structure there will be little affinity between most scholars and agriculture, which is probably the reason why so little regard has been paid to the only extant, complete work by Varro. It is not to be expected that many scholars will go to such lengths as to study ancient agriculture for Varro's sake.

The present writer approached the subject from the opposite angle. His starting point was research into Roman agriculture as part of economic history. Studies on a wider basis of Roman history generally meant that he constantly encountered Varro as the pre-eminent scholar of antiquity, and an attempt at evaluating Varro as a scholar within the only branch of science where he can be studied today, immediately suggested itself. In a previous study I have discussed the Roman farm, the villa rustica, and its position in social and economic history [9]. It therefore appeared a sensible procedure to limit the present study to Varro's Book I, as the whole subject of that book is just the type of farming practised at a Roman villa rustica. This type of farming, systematically explained

7. Entretiens p. 3.

8. Plinius minor epist. III, 5. For a discussion of this description see also pp. 102 sqq.

9. Den romerske villa rustica (Studier fra Sprog- og Oldtidsforskning No. 246, Copenhagen 1961).

and described, is closely connected with the type of farm which, with the hellenization of Italy, was gradually superseding that of the old Italic peasantry, the backbone of the Roman army. All self-respecting people invested in such estates, and some knowledge of, and contact with, husbandry—however superficial—was natural for any Roman, whether educated or not. Hence, Varro's treatise had, no doubt, a much more general effect on his contemporaries than on people of later times, and it seems quite clear that the majority of Varro's literary models were writers on villa-farming. A further reason for concentrating on Book I is the fact that its subject is much more diffuse than those of Books II and III. Strictly speaking, it is hardly possible to arrange the subject of Book I according to a system—and Varro's attempt at such an arrangement is not wholly successful. But this is the very reason why Book I affords a good insight into Varro's working method, which is easily recognizable in Books II and III. Chapters II–V of the present Studies contain occasional references to these books; but, as previously mentioned, they are chiefly concerned with Book I, which presents many more problems than can be reasonably discussed within the scope of a work of this kind. A complete treatment would necessitate a new, thoroughly annotated edition based on modern, critical research, which is certainly a desideratum [10].

The opening chapter of the present Studies will deal with the structure of Book I; in the following chapters certain aspects typical of the writer's way of thinking and working method will be discussed. This should lead to criteria, on the basis of which a judgment of the treatise can be more safely formed.

10. Already in Antiquity Varro's agricultural treatise seems to have been published together with Cato's *De Re Rustica*, and all manuscripts descend from that edition. The present work is based on the Goetz's edition of 1929 (Teubner), and unless otherwise stated, quotations are taken from that. In general, textual discussion is avoided when possible, as, in the writer's opinion, most attempts at securing a more correct text are based upon arbitrary judgment, which is unsatisfactory. For a more recent discussion cf. A. Mazzarino: *M. Catonis De Agri Cultura* (Teubner 1962), containing a comprehensive, critical introduction.

I

STRUCTURE

It is a well-known fact that Varro wrote his agricultural treatise in the form of a dialogue; however, this form, having in itself no direct bearing on the structuralization of the material, will not be given any major consideration in the following study. Besides, the literary form has recently been dealt with in a monograph by Heisterhagen, so that there is no need here to pursue the matter further. On the whole, I agree with this author's opinion that the dialogue form serves to create variation in the frequently dry and technical treatment of the subject. A comparison with e. g. the *Rhetorica ad Herennium* clearly shows that it can be successfully used. The remarks of the less important speakers make for pleasant variety, now in the form of an excursus (e. g. Fundanius I, 13,6), now just a wish to hear more or to spur the main speaker on (Agius I, 26; I, 44,3; I, 56; Agrasius I, 23,1). These eager interruptions are naturally intended to stimulate the reader's interest; they also serve as introductions to the various divisions of the technical description. Of equally little consequence to the structure are, of course, the instances of Varro's somewhat dry humour and subtle wit with which he repeatedly spices his account. This is a stylistic feature which is only gradually realized by the reader, and which makes numerous re-readings of the work an exciting experience, whether it be due to a conscious adoption of the style of the Menippean satire, as maintained by Heisterhagen, or simply to the fact that Varro was himself a man of subtle wit and humour which he neither could, nor would, repress.

Another characteristic is the Roman atmosphere [1], which is by no means accidental. To the Roman, the very subject of agriculture is closely connected with a genuine love of his native land and soil. A description of ploughing calls easily to mind M.' Curius Dentatus, and other historical persons. Hence, his insertions of antiquarian remarks mix very naturally with the more technical description, and, together with the dialogue form, help to introduce the various division. Likewise, quite precise references or allusions to agriculture often have a natural place in poetry and in rhetorical and other rationalizing genres. Agriculture as a topic in Latin literature would provide a subject for much useful reflection, which would indubitably disclose the surprising fact that poets, as well as prosaists, are extremely knowledgeable in this field.

However, these stylistic and literary niceties, which combine to make Varro

1. Cf. Rudolf Hirzel: *Der Dialog* (Leipzig 1895), vol. 1, p. 564.

such delightful reading, are outside the scope of the present study. The purpose here is to discuss Varro's systematization of the subject of *agri cultura*, although the above-mentioned features will greatly facilitate the understanding of Varro's compositional technique. Furthermore, the author himself facilitates the task by carefully—often almost pedantically—grouping his subject into main divisions, and these again into subdivisions and sub-subdivisions. Each division is often headed by a title or definition, and recapitulations occur frequently. Evaluation and discussion of the systematic arrangement present much more difficulty. As previously mentioned, the subject does not lend itself easily to systematization. We shall often find a main division which serves no practical purpose, threads which are not seriously resumed, and divisions which seem forced upon the subject, as if for division's sake only. The purpose here is not to prescribe the way in which Varro ought to have written his treatise, but rather to point out the passages where his divisions seem strange or positively confusing. A comparison with his predecessors within the subject is useless here, as Cato's work, remarkable in many respects, is, as far as composition is concerned, almost incomprehensible [2], and the great bulk of agricultural literature between Cato and Varro is lost [3].

Cato's work bears so little resemblance to our treatise that a comparison is fruitful only in one instance [4]. Thus, Varro's treatise has to be analysed by itself, and an evaluation must be based on the reader's—i. e. here, the present writer's—estimate of the presentation of the subject. Consequently, such an evaluation runs the risk of being subjective, whereas a description runs the risk of being tedious, since it can be, in fact, no more than a reasoned account of the treatise itself, only in words less colourful, and much less varied terms.

The presentation falls into two, clearly divided, parts, each of which has its own, apparently independent, systematization. The division is marked in the dialogue by the speeches of two different persons, Gn. Tremelius Scrofa and M. Licinius Stolo, each introduced as a specialist in his field [5].

Scrofa's discourse is by far the most theoretical part of the Book. It runs from

2. A. Mazzarino, in *Introduzione al De agri cultura di Catone*, pp. 11 sqq. (Rome 1952), divides the modern research into two schools: those for whom the surviving treatise is a heavily interpolated edition of Cato's original text; and those for whom the treatise is a work which was never finished by Cato, a "Notizbuch" with a few elaborated, literary passages. In many respects, Mazzarino endeavours to harmonize the two viewpoints. See also R. Helm: *M. Porcius Cato Censorius* (RE XXII coll. 147–56).
3. The basic work is R. Reitzenstein's dissertation: *De scriptorum rei rusticae qui intercedunt inter Catonem et Columellam libris deperditis* (Berlin 1884).
4. Cf. p. 20.
5. Gn. Tremelius Scrofa wrote an agricultural treatise himself, cf. Reitzenstein, *op. cit.* pp. 12 sqq., Schanz-Hosius: *Römische Literaturgeschichte* I, pp. 603 sq., Münzer: RE vol. 6 A, 2 coll. 2287–89. It is a moot point whether Stolo should also be considered among the agricultural writers, cf. Reitzenstein, *op. cit.* pp. 8 sqq., Münzer, RE vol. 13, coll. 469 sq.

I, 3 to I, 37,3, and, after concluding the introductory discussion, he begins straight away with some definitions: *agri cultura* is *ars* as well as *scientia* [6]; its elements are the same as those of the universe, i. e. water, earth, air, and fire; it serves a profitable, as well as a pleasurable, purpose, providing both material return and enjoyment. This puts the subject in its theoretical setting, and the actual systematization may begin.

As a discipline, agriculture is divided into four divisions (*partes*), each of which is divisible into two subdivisions (*species*). This gives us the following plan (I, 5,3 sq.):

agri cultura	A. cognitio fundi	(1) quae ad solum pertinent (2) quae ad villas et stabula
	B. quae in fundo opus sunt	(3) de hominibus (4) de reliquo instrumento
	C. quae facienda sunt	(5) quae praeparanda (6) ubi facienda
	D. quo quicque tempore fieri convenit	(7) quae ad solis circuitum annu(u)m referenda (8) quae ad lunae menstruum cursum referenda

This may seem a feasible outline of the discourse, but it is, in fact, only partially followed. Item (2), for example, is treated as a subdivision of (1), and instead, a number of observations are made on factors external to, though exercising some influence on, the *fundus*. When dealing with B, Scrofa merely mentions the two subdivisions, and then immediately introduces the famous three categories: *instrumentum vocale*, *semivocale*, and *mutum*, which form the basis of the following explanations (I, 17,1 sqq.). Nor is the twofold division observed in C, a distinction being drawn between “*quae et quo loco quidque maxime expedit serere*” (I, 23), a distinction which is also later abandoned. The two threads meet in a curious manner and end in a paraphrase of Cato. Finally (8) is made a very short—partly jocular—appendix to (7), which, on the other hand, is an elaborate agricultural calendar. Why, then, this careful planning at the beginning, when it serves as a preliminary survey only, and is not adhered to later? [7] A closer analysis will show that similar characteristics also appear in the more detailed treatment.

6. For the terms “*ars*” and “*scientia*” in Varro cf. also pp. 89 sq.

7. The discrepancy between the introductory systematization and the actual description has been only superficially discussed in the previous literature. Zahlfeldt attributes it to Varro’s careless form (*Quaestiones criticae in Varronis rerum rusticarum libros tres*, diss. Berlin 1881, p. 6). Dahlmann, however, sees no difficulty: “Den Dispositionspunkten, die er 5,3 aufführt, folgt die Darstellung ganz glatt und klar” (RE Suppl. 6, col. 1188). Fuhrmann only says: “In Wahrheit bestimmt lediglich die zuerst genannte Vierteilung den Aufbau des 1. Buches; die acht species dagegen werden in der Darstellung nicht berücksichtigt” (op. cit. p. 71).

The first part of the first division, the soil, is again divided into four subdivisions, each with an individual treatment (I, 6 sqq.): *forma*, *genus terrae*, *quantus*, and *quam per se tutus*. The lack of formal parallelism in these four sections is striking. Then each point is dealt with separately. *Forma* is partly “quam natura dat”, partly “quam sationes imponunt”. Either of these can be good or bad, which gives us another fourfold division. The *forma* not given by *natura* is not analysed in greater detail, Varro confining himself to the necessity of fields and orchards being regularly laid out, which is pleasant to the eye as well as useful, orderly objects taking up less room than disorderly objects (I, 7,2, sqq.). This is illustrated by examples. *Forma naturalis*, on the other hand, is divided into three types: *ager campester*, *collinus*, and *montanus*, to which is added a fourth: *mixtus*. Then follow comparisons between these types, with examples taken from the vegetable kingdom. The consequence of the natural situation of the soil is that, generally, grain should be cultivated in the lowlands, vines in the hills, and forests in the mountains. After a brief discussion of various types of lowlands, Stolo ends this part of the subject by quoting Cato’s definition of the best land for cultivation (I, 7,1). The whole explanation is rather short and not very remarkable. Only the division is of importance, but its practical value is, of course, secondary, as the configuration of farmland cannot be considered independently of the quality of the soil. Consequently, the attention is concentrated on the next part of the subject: the *genus terrae*. This part is also divided into two, but this is not for purposes of systematization, the introductory part being of a more general, the following of a more technical nature. The problem is what to cultivate in the various types of soil, and the general part deals with the plants that can be cultivated, whereas the technical part is concerned with the nature of the soil. Both parts are introduced by the verb “refert” (I, 7,5; I, 9,1). The general part expounds the thesis that not everything can be cultivated in the same type of soil. This is illustrated by botanical examples taken from Theophrastus. Stolo again interrupts the discourse (I, 7,9), mentioning Cato’s nine categories of crops according to the quality of the soil: vines, a watered garden, an osier bed (for wicker-work), olives, meadows, grain, timber, vines grown on trees [8], and a mast grove. To this division Scrofa has his objections, including the fact that some people think vine-growing too costly; he then proceeds to enumerate various types of vineyards, again beginning with the word “refert” (viz. “quod genus vineae

8. (agr. I, 7). The question whether Cato by “arbustum” means vine-growing on trees, or whether the word is to be taken in its normal sense, is often considered uncertain. The word is used by Cato in the following places: Chap. 7: “fundum suburbanum arbustum maxime convenit habere; et ligna et virgae venire possunt et domino erit qui utatur”; Chap. 137: “vineam curandam partiario. Bene curet fundum, arbustum, agrum frumentarium”. Neither of these places throws any light on the precise meaning of the word. Thielscher (Des Marcus Cato Belehrung über die Landwirtschaft, Berlin 1963) translates it “Buschwald”, Boyd Ash (Loeb) doubts whether “arbustum” in Cato has to do with vine-growing, whereas Billiard (La Vigne dans l’Antiquité, p. 367) without any hesitation interprets it as a method of growing vines in Cato as well. If so, it is surprising that it is placed so low on the list of profitable crops.

sit", I, 8) [9]. It is surprising to find an analytic account of various types of vineyards at this point in the dialogue, the subject here being the *genus terrae*. Apparently, the reason is Stolo's interjection, which side-tracked the discourse, thus turning Chap. 8 into a contribution to the discussion on the profitability of vineyards. No conclusion is drawn, but the reader or the participants in the dialogue are left to decide for themselves in which circumstances wine can be reasonably placed at the top of the list of profitable crops. Naturally, it all depends on the costliness of the method used. As a contribution to the discussion which has arisen, Chap. 8 acquires a parenthetical character.

The technical part of the subject of the *genus terrae* resumes the main thread, which explains the repetition of "refert". It begins with a semantic explanation of the word "terra" (I, 9). It has three senses: (1) *orbis terrae*, or *terra Italia*, described as *communis*; (2) *terra proprio nomine*, i. e. as a substance; (3) *terra as mixtum*, i. e. composed of certain constituents in which cultivation is possible. Of course, it is this third sense which is of interest to Scrofa, but a linguistic starting-point of this kind seems rather out of place in a treatise on agriculture. However, this linguistic interest will frequently recur.

First, the soil is classified according to its constituents. A total of eleven geological substances are enumerated, which, in any soil, may occur in different amounts: high, moderate, and low, e. g. *valde cretosa*, *mediocriter cretosa*, *paene pura*. To this must be added the fact that the soil may be very wet, very dry, or in between. On purely theoretical considerations this presents us with 99 possibilities for the classification of the soil, to which, in a number of cases, must be added differences of colour. Obviously, this classification is of no practical value to the science of agriculture, and now, without any connecting link, there follows the well-known classification of the soil into three categories: poor, rich, or medium. This is the classification Scrofa now proceeds to use, and he probably considers it so universally known that he does not have to define these categories. The ancients had several methods for deciding the "richness" of the soil [10], but none of these is mentioned here. They had other categories of quality as well, in the form of opposed pairs of adjectives with an intermediate group, but here there is no mention of these either. Once more Stolo interrupts, referring to Diophanes of Bithynia, who had, no doubt, dealt with this important aspect of agriculture in greater detail [11]. Even the kindly disposed reader must admit that our treatise leaves him somewhat unenlightened.

9. Dahlmann (RE Suppl. 6, col. 1189), with Schneider and several of the latter's predecessors, maintains that Varro should be supposed to be speaking the chapter himself. This also applies to Chap. 9, 1-6 and Chap. 14, both with an "inquam" or "dicam" at the beginning. I follow Keil's interpretation: "inquam et hic et postea 9,1 non ad ipsum Varronem referendum esse, sed ad Scrofam, intellet quicumque rationem instituti sermonis perspexerit".

10. Cf. especially Vergil, *Georgica* II, 288 sqq. Columella II, 2, 18; Pliny Nat. Hist. XVII, 33 sqq.

11. Under the name of Diophanes a method to test the quality of the soil is handed down in *Geoponica* II, 11.

The third division, *de modis*, corresponds to the *quantus* of the main division (I, 10 sqq.). The meaning of the Latin word “modus” affords an opportunity for the author, first to give a lexical summary of the most common units of area, taking the word in its sense of “unit of measurement”; he then takes it as “in bonam partem”, the proper measurements: the farm buildings must be in reasonable proportion to the land (I, 11). This leads to a number of rules for the locating and building of the farmstead, the point we expected to be the second subdivision of *cognitio fundi*. For the first time, Scrofa has decisively broken the general outline given by himself, the breach apparently motivated by the word “modus”, which gives rise to the train of thought: unit of area → the ideal size of the farmstead → its location generally. This is, moreover, the first time direct rules are prescribed—expressed by the gerundive or by *oportet* + inf.—first, the location of the farmstead in relation to wind and weather; then, the placing of the individual buildings, such as cowshed, barn, accommodation for the slaves, etc.; finally, the manure heap, threshing floor, and the like. This part of the subject is closed by Fundanius, an elderly participant in the discussion, who praises the more modest building manners of old compared with the luxury of today. The rules for the farm buildings are comprehensible—if not so technical as Cato’s, which seem to be meant as a guide in actually constructing a building [12]. This makes the section on the *villa et stabula* the predominant part of the *modus fundi*, and Fundanius, in the role of *laudator sui temporis*, puts an effective full-stop to it (I, 13,6).

Scrofa now enumerates various types of enclosures, corresponding to the division announced as “quam per se tutus” (I, 14). This is a truly analytic summary of enclosures of all kinds, divided into four main groups with subdivisions and examples. He adds, as a matter of form, that some people have no enclosures. Part A (1) can now be closed with a short summary (I, 15), but as the announced subject of A (2): “quae ad villas et stabula pertinent”, has already been dealt with, we get instead “pars quae est extra fundum, cuius appendices et vehementer pertinent ad culturam propter adfinitatem” (I, 16). This is also subdivided into four categories: unsafe neighbourhood, no market for buying and selling, no possibilities of transportation, noxious plants nearby. All these categories are introduced in the negative form: they are drawbacks, and therefore to be avoided. This part contains much interesting information about artisans in the country, a quotation from, and polemics against, Saserna, the agricultural theorist; however, as it adds but little new to the structure of the treatise, I shall not deal with it in detail.

The first part (*pars*) of the general outline is now finished, and after a somewhat clumsy recapitulation of what has been said up till now, the discourse proceeds (I, 17,1): “nunc dicam agri quibus rebus colantur”, corresponding to B of the main plan: “quae in fundo opus sunt culturae causa”. As previously mentioned, the twofold division announced is immediately abandoned in favour

12. Agr. 14 sqq., with comments of Paul Thielscher (op. cit. pp. 220 sqq.).

of the threefold division: "instrumenti genus vocale, in quo sunt servi, semivocale, in quo sunt boves, mutum, in quo sunt plaustra". *Instrumenti genus vocale* is now, in turn, subdivided into three groups: slaves, freemen, or a combination of both. Freemen are again subdivided into three categories: *pauperculi*, *mercennarii*, and *obaerarii*, of which only the middle category is of interest here on account of the ensuing discussion on the advantages of using slaves or hired hands. Normally, the daily farm work will be carried out by slaves, and freemen will be hired to help with the heavier work, such as harvesting, vintage, and hay-making. Then, in the form of a quotation or paraphrase, Scrofa brings in the advice of Cassius Dionysius on the purchase and treatment of farm hands. In I, 18 the problem of the number of slaves is discussed. The rules given by Cato and Saserna are compared and considered. Varro's criticism of his predecessors has been called superficial [13]; it is, however, an excellent example of ancient polemics. It would be practical, if a formula could be made by which the exact number of slaves required to work a certain area could be calculated. Saserna tries to establish a ratio of one slave for eight jugera, whereas the figures stated by Cato in the two lists of equipment (agr., 10–11) can hardly have been meant as norms. Of course, no attention is paid to that, as the idea of a polemic was not to try to understand an opponent loyally and then refute him. On the contrary, the pervading feature of ancient polemics seems to have been to misunderstand the opponent, twisting his arguments, and carrying them in absurdum [14]. This may be due to the influence of the law courts on scientific usage. Considering the great differences in configuration of the land in Italy, Varro is probably justified in his criticism; its form, however, may strike a modern reader as strange.

The polemic against Cato and Saserna is continued in the passage on the *instrumenti genus semivocale* (I, 19). With regard to the number of draught animals, we should, as in the case of slaves, follow the practice of the former owner, the practice of our neighbours, and our own experience to some extent. The first two divisions of B close with rules for the purchase of draught animals (I, 20), which gives us a nice chiasmus: *paratio servorum—numerus / numerus boum—probatio*, caused by the suitability of concentrating the criticism on the figures stated by his predecessors. The transition is nice and smooth.

Finally, in the form of practical instructions, there follows (I, 22) the description of the *instrumenti genus mutum*: what cannot be made or produced on the farm must be bought—and not just bought cheaply, but with a view to quality. Stolo again interrupts with a paraphrase of Cato's list of equipment, and Scrofa ends by saying that the owner of the estate should keep an inventory (in town,

13. Cf. e. g. Gummerus: *Der römische Gutsbetrieb*, Klio, Beiheft 5, 1906, p. 61: "Hier zeigt sich besonders deutlich, wie unselbständig er (Varro) seinen Vorgängern gegenübersteht. Er kritisiert zwar die Angaben von Cato und Saserna, aber seine Einwände sind nur formaler, oberflächlicher Natur, wie sie von jedermann gemacht werden konnten"; cf. Dahlmann, *RE Suppl.* 6, col. 1196.

14. Cf. e. g. Cicero's censure of the Epicureans in the *De Finibus*.

as well as on the estate) of all the tools and equipment of the farm, and have everything very carefully supervised, so that nothing may disappear.

Thus, part B of Scrofa's discourse is quite different from part A. Former literature is much at issue, there are long passages of actual rules, and the analytic description has receded into the background. There are also fewer interruptions by the other participants in the dialogue, so that the character of the discourse stands out more clearly.

In the third main part, C, there are certain characteristics which are not so easy to fathom. In his general outline (I, 5,3) Scrofa, announcing this part: "quae . . . colendi causa facienda", used a twofold division: "quae praeparanda et ubi facienda". Then, when he begins dealing with the question, he says (I, 23): "duo consideranda, quae et quo quidque loco maxime expediat serere". We might now expect a catalogue or a schematic description, arranged partly in accordance with the nature of the plants—botanical or rather, perhaps, as crops—and partly in accordance with the various types of soil, so that we would learn where the individual plants should be grown. We saw, however, how rudimentary Varro's description of the classes of soil was; it is, therefore, no wonder that the treatment of part C cannot be considered satisfactory from a scientific point of view either. Stolo again has to interrupt with a paraphrase of Cato, giving a survey of various types of soil and the plants that can be profitably grown in each of them.

First Scrofa mentions a number of plants grouped, apparently, according to no particular system. We begin with a general definition of the problem: some places are suitable for hay, others for vines, others for olives . . . and it is wrong to believe that everything can be grown in rich soil, nothing in poor. It is a characteristic feature that the definition has a positive, as well as a negative, side. Then follows a group of plants that can be grown in poor soil—here called "terra tenuis". This sentence, with the linking word "enim", justifies the foregoing definition. Then follows a group that is cultivated in rich soil. Thus, the construction is chiasmic: "neque in pinguī terra omnia—neque in macra nihil / rectius enim . . . in tenuiore—in pinguī rectius . . .". Now follows a series of plant groups, not opposed two and two, as were the first two groups, but one group always opposed to the preceding group. As opposed to the plants of the rich soil, which are "<c>ibi majoris", there follows a group which is not cultivated "tam propter praesentem fructum quam in annum prospicientem", viz. lupins and other green manure plants. Then a group which is "fructuosa propter voluptatem", then "quae ad hominum victum ac sensum delectationemque non pertinent neque ab agri utilitate sunt diiuncta", viz. willow trees and similar plants demanding *humid ground*, as opposed to the plants demanding *dry ground*. Some plants, e. g. asparagus, require *shade*; *sunny spots* are good for flowers. Then follows a number of groups classified by the place of cultivation, given merely as "alio loco". We are now in a classification according to the purpose or the usefulness of the plants, but several of them come under "such plants as have

neither nutritive nor pleasurable value, but are nevertheless useful". The catalogue ends by mentioning the places that are suitable for two different crops at the same time, e. g. vegetables in newly planted orchards.

The above analysis shows that this part of the work is not constructed in a very scientific manner. The grouping is mainly based on the layman's associations, not on any overall scientific or practical view. Nor are repetitions and overlappings avoided. This almost gives Stolo's interruption (I, 23,7) an air of criticism. Cato's grouping [15] is eminently practical:

ager crassus et laetus sine arboribus
idem ager, si nebulosus
in agro crasso et calido
qui ager frigidior et macrior
circum fundum
si locus umectus

qui locus optimus vino sit. This is a group in itself [16], which might be entitled "de vineis". In this paraphrase of Cato by Stolo there is no theorizing; on the contrary, we find practical rules and nothing else. A characteristic feature is also the quite precise names of various vines and olives. In Varro's treatise such precise names are found mainly in the paraphrases of Cato [17]. Only Cato's language is modernized, and a linguistic/factual comment is added to the explanation of the word "hostus", for the benefit of the reader who does not command the rustic vocabulary. Of course, Varro/Stolo could have avoided the word in the Cato paraphrase, but this linguistic-antiquarian interest is very characteristic of our treatise. The analysis of part C thus shows a considerable lack of firmness in the approach to the description. Here there is no systematization and the description follows a rather haphazard course, until Stolo saves it with his paraphrase of Cato.

Part D of Scrofa's outline is entirely dominated by an agricultural calendar (I, 29–36). In his main outline he certainly promised to deal with the subject in two divisions, but, as previously mentioned, the division of the year into lunar periods is given a very brief treatment (I, 37,1–4). This treatment has a humorous air, dealing with what is obviously superstition, a thing to be laughed at, but at the same time not to be totally disregarded. The agricultural calendar does not follow the 12 months of the year, as do Columella's and Palladius' calendars. First the year is divided into four seasons, and a brief description is given of the most important work to be carried out in each (I, 27,2–3). Then follows a division of the year into eight periods fixed by eight points, and in I, 29–36

15. Cf. agr. 6 with the introduction: "agrum quibus locis conseras, sic observari oportet".

16. Cato begins (agr. 6, 4) with the following words: "vineam quo in agro conseri oportet sic observato"; cf. Varro I, 25: "vineam quo in agro serenda sit, sic observandum". Thus, in both writers a new passage is begun here.

17. Cf. I, 58 sqq.; see also p. 87.

we are told of the work to be done in each period. There seems to be no actual connection between these two divisions of the year [18].

The reason why Varro does not follow the civil year is obvious. As we know, the Roman year was a combination of a solar year and a lunar year, and, thanks to the irregular insertion of the intercalary month, the civil year was out of step with the astronomic year. Not until Caesar's reform were the two years made to coincide. This is of minor importance to civil life, but not so to agricultural life. The various operations on a farm have to be carried out at the proper seasons, and this necessitates a calendar which does not change from one year to the next. Our treatise is written *after* Caesar's reform, but the *dramatic* date is considerably earlier—in other words *before* the reform [19]. Trying to avoid anachronism is an established rule of the dialogue genre [20], so, if only for that reason, the earlier, now unnecessary, astronomic division has to be preserved. There is undoubtedly a second, equally—or even more—important reason for adhering to the special agricultural calendar. At the end of this part of his discourse Scrofa states (I, 36) that what he has said should be kept in written form at the farm in order that the *villicus* particularly may know it. The idea immediately suggests itself that things are, in fact, the other way round. Varro, through Scrofa, simply gives an account of a normal working calendar, probably from one, or several, of his own farms. In other words, Varro, being an old man when he writes his treatise on agriculture, has not brought his calendar up to date—and, also, in this way he avoids disturbing the fiction of the dialogue, as previously mentioned. Besides, a carefully worked out agricultural calendar was necessary for Cato's unexpected inspections of his farms. We are advised to ask the *villicus* "quid operis siet factum, quid restet, satisne temperi opera sie(n)t confecta . . ." [21]. Consequently, the procedure must be fixed beforehand. The

18. For further discussion of the calendar and its form see Chap. IV, pp. 43 sqq.

19. Our treatise is dated to 37 B.C. by Varro's own words in the preface to Book I (1): "annus enim octogesimus admonet me ut sarcinas conligam, antequam proficiscar e vita". For the dramatic dating of Book I, a terminus post quem is given in I, 2, 10, where Varro is mentioned as a member of the Commission established in 59 for parcelling out the Campanian lands. Schneider, seeing an allusion to the Civil War between Caesar and Pompey in I, 4, 5, placed that war as a terminus post quem (*Scriptores rei rusticae veteres Romani* I, 2, p. 222). However, the event alluded to here may just as well have taken place during the war against the pirates in 67, and is thus of no importance at all for the dramatic dating; cf. Keil's comment on the passage, and Storr-Best: *M. T. Varronis On Farming* p. XXIX. Dahlmann (*RE Suppl.* 6, col. 1187) considers the two mentions of L. Lucullus (I, 2, 10 and I, 13, 7) to be references to a person still alive, by which we get 57 as a terminus ante quem, which seems to be the most reasonable solution.

20. Whereas Plato's dialogues contain numerous anachronisms, Cicero tries to avoid them. If the above dramatic date of Book I is correct, we must consider the conversion of the starting dates for the seasons to the Julian calendar an anachronism, I, 28, 1: "redacta ad dies civiles nostros, qui nunc sunt". "Nunc" must here refer to the time of writing!

21. *Agr.* 2.



remnants of an agricultural calendar may be discerned behind Cato's composition of parts of his work. In chapters 23–60 he describes various agricultural operations: vintage (23), sowing and planting (27 sqq.), manuring (29), sowing again ("redeo ad sementem" 34), work by lamplight in winter (37,3) and in bad weather (39), work to be done in the spring (40), vine grafting (41: "vitis insitio una est per ver, altera est cum uva floret"), haymaking (53). Cato bases his description on the individual operations, but introduces them in almost chronological order. The greatest stylistic likeness between Cato's and Varro's agricultural calendars we find in Cato's Chap. 40, headed: "per ver haec fieri oportet"; this is followed by the individual operations in the accusative and infinitive construction until the description of grafting, where Cato uses the future imperative, his favourite mood for concrete instructions. In the same way, Varro frequently uses the accusative and infinitive dependent on "oportet" or "debent" (which may be omitted), and the gerundive may also be used. Thus, everything indicates that special agricultural calendars did exist, and it may reasonably be supposed that Varro has, in fact, used such a calendar as his source [22].

This gives the general outline of the various divisions of the subject. After the brief statements in the calendar of the operations pertaining to each period, there follows an explanation or comment. In I, 29 the following words are explained: *seges*, *arvum*, *novalis*, *proscindere*, *offringere*, *lirare*, *sulcus*, and *porca*, and we are told that an *occatio* may follow upon the sowing. Not until I, 31 is *occare* explained, and here also is described the thinning of vines, accompanied by an explanation of a number of terms relating to the various parts of that plant. One chapter (I, 32) elaborates the terse instructions of the calendar, and the explanations and reflections added about the more special plants—e. g. *violaria* (I, 35)—are, of course, Varro's/Scrofa's own explanations of the bare facts stated in the agricultural calendar. It does not make sense to imagine even Varro's overseers working with a calendar containing fine etymologies of agricultural terms they have known from their childhood. So, in this last main division of Scrofa's discourse we find a new working method being used: the philological and explanatory commentary on a given text, the agricultural calendar, a practice already anticipated by e. g. the explanation of Cato's word "hostus". The whole section has a somewhat incomplete air, as it leaves out explanations of many things one would have liked to hear more about. There is no description of the carrying out of the individual operations, they are just mentioned in their proper place; only ploughing and vine thinning are explained in any detail. Even this is, however, less a technical description of the work itself than an explanation of the various words. Still, it is easy to see that if an agricultural calendar was to describe carefully all that was to be done at any one time, it would lose its

22. Paul Thielscher seems to assume Varro's calendar to be directly dependent on Cato's calendric notes (op. cit., pp. 370 sqq.). Apart from the subject, there is no evidence in favour of this supposition. The explanation accepted here of Varro's calendar, however, should explain a number of peculiarities.

character as a calendar—and hence its usefulness as such [23]. Varro/Scrofa presents an agricultural calendar, adding such explanations as are considered necessary for a reader unacquainted with these matters.

This, then, is the end of Scrofa's systematization of agriculture. As the discourse proceeded he changed his original plan, as we have seen. He has also used various scientific methods in his descriptions, from the rather haphazard cataloguing by association to exhaustive analysis. The scientific literature has been quoted, paraphrased and discussed, polemically or approvingly. Finally, a no doubt well-known calendar has been supplemented with various comments for the benefit of the technically ignorant reader. On the other hand, we have had no actual description of the most important operations, such as the harvesting of corn, wine, olives, etc. This is where Stolo comes in, with the second discourse of the dialogue—not as an interruption, for Scrofa has done, and finishes with these words: “dixi de quadripartita forma <in> cultura agri” (I, 37,3), but as a new “temporum divisio”, which is not arranged in accordance with the seasons, but with the nature of the work and the development of the plants. In a way, Stolo's contribution can be taken as an elaboration—or criticism—of Scrofa's part D, which has just come to an end.

Stolo divides his subject into six steps (gradus: 37,4): *praeparatio*, *satio*, *nutricatio*, *lectio*, *conditio*, and *promptio*. The division may thus be said, in his own words, to be “conjuncta quodam modo cum sole et luna”. For example, *satio*, meaning sowing as well as any kind of planting, will be taking place at almost any time of the year. There are six steps in the development of plants or crops to be described—no matter *when* they occur within the calendar year. A closer scrutiny of the treatment of each step will show that here, too, there is great discrepancy.

The *gradus praeparandi* begins (I, 37,4) by mentioning various methods of preparation of the soil: the digging of trenches (*scrobes*), ploughing, hoeing, etc., giving examples of plants corresponding to each type. Then a brief explanation: the different nature of roots, illustrated by a few examples from Theophrastus' botany. Further, another example or two of *praeparatio*; but it is mere enumeration—we still hear nothing of *how* the individual operations should be carried out. Finally, there is quite a detailed description of manure, following the classification of Cassius. The viewpoints of this predecessor seem to be adopted directly, with some personal observations added, e. g. on the importance of securing the dung from one's aviary if one has one to let [24]. This passage ends with a brief mention of the manure heap, which Scrofa has already carefully described

23. The practical purpose of the agricultural calendar is not fully realized by Dahlmann, who stresses the inconsequence of separating it from the six gradus of agriculture: “Nur einem Stubengelehrten wie V., konnte der wunderliche Einfall kommen, aus Vorliebe zur Stoffgliederung, organisch Zusammengehöriges auseinanderfallen zu lassen, wie das genus annale und die gradus” (RE Suppl. 6, coll. 1196 sq.).
24. Varro's own interest in aviculture appears from the description of his aviary at his farm at Casinum (III, 5, 9 sqq.).

(I, 13,4). The treatment of the *gradus praeparandi* must thus be said to be summary and superficial. Only the passage on manure goes beyond enumeration and exemplification.

The second step, sowing and planting (I, 39 sqq.), establishes immediately the importance of the time at which it is carried out, as the period of growth differs for different plants. Just as plants are flowering at different times, so do the various stages of growth differ. This fact is also illustrated by examples. This leads to the division into four types of *semina*: the natural type (<qua natura dedit>), transplanting of rooted plants (quae transferuntur e terra in terram viva[s] radice[s]), cutting (quae ex arboribus dempta demittuntur in humum), and grafting (quae inseruntur ex arboribus in arbores). This fourfold division is now followed by a separate treatment of each type.

The natural *satio* is first divided by Stolo into the invisible kind and the visible kind. He is here in agreement with ancient botany, which held that some plants were able to reproduce "invisibly", and he supports his opinion by referring to Anaxagoras and Theophrastus. In this connection, of course, only the *visible* reproduction is of interest, and this also is divided into two: that by seeds sown by Nature (quae sine colono, priusquam sata, nata), and that by seeds sown by the farmer (quae ex iis collecta neque, priusquam sata, nata). A few rules are given concerning the latter type: the seed grain should not be too old, and should not be mixed. Old seeds can produce quite different plants.

In the case of the second type of *semina*, those transplanted, it is important to observe the proper times, which—according to Theophrastus—are spring, at the rising of the Dog Star, and autumn, depending on the quality and humidity of the soil, and on the type of plant. Reproduction by cutting (*surculus*) is also treated very briefly; we learn when and how to cut the shoots, but only for olive cuttings do we get separate instructions. Finally, grafting is dealt with, and in much greater detail than the other methods of reproduction. First, some general aspects of grafting; then a description of an entirely new method, according to which the scion is not cut off the parent tree until it has taken a firm hold in the tree on to which it is grafted. With rules for the proper season for grafting and certain precautions to be taken to protect the place of grafting from excessive moisture, this last passage of the fourfold division ends, and is followed by some reflections on the suitability of the individual methods for various plants. Slowly growing plants should be reproduced by cuttings, not seeds, as the latter method is used for trees only in the cases where transport over a long distance is involved. The soil which is to receive the cutting (or seed) should be only moderately moist, not more. Then follows the unconnected information that the proper amount of alfalfa to be sown is a *modius* and a half to the iugerum, and the method is the same as for grain. Shrub trefoil (*cytissus*) is sown like cabbage seed and later transplanted. (In other words, the reader is supposed to know how to sow cabbage seeds!). Cuttings can also be used, however. We now get the amount to be sown per iugerum for a number of cereals and pulse, and we are advised to sow more if the soil is rich, less if it is poor.

Again, the practice of the district should be observed. Examples are quoted of yields in various areas, followed by a brief description of fallowing. Finally, after Agrasius' remarks on crops in Olynthos, Stolo asserts that fields ought to be left every other year with lighter crops.

As will be seen, this part of Stolo's discourse, to which I shall revert in Chap. VI, begins with general reflections leading on to a systematization, the separate parts of which are then treated individually. A comparison between these parts follows. It is worth establishing at this point already that it is not a question of systematization of the reproduction of plants, as we meet it in botany. If that were the case, we should miss, among other things, a description of layering (propagatio), which is of such great importance to wine-growing. It is simply, as announced at the start, a systematization of the actual process of sowing and planting, *satio*.

This, however, does not explain certain omissions, e. g. of the well-known shield budding. The transition to the amount of seeds per unit area (I, 42) seems neither prepared in, nor warranted by, the immediately preceding remarks. The linking words are abrupt: "in primis observes". Nor might the ensuing remarks on yields be expected at this point. The train of thought leading to yields is clear, however: the farmer should note the amount usually sown in the district, as the types of soil differ so widely—in some localities a seed yields tenfold . . . The same train of thought leads to the remarks on fallowing. Yield and fallowing are here factors of importance, not in themselves, but in relation to the amount of seed to be sown.

The third step is the *gradus nutricandi*, i. e. the tending of the plants from sowing to harvest (I, 44,4–48). Stolo's starting point is the eternal cycle in Nature: after sowing all plants grow, conceive, and in due time bear fruit or ear, returning as seeds. Consequently, nothing will grow in the same year if the fruit is broken off when still unripe. The same plant cannot have two periods of gestation. Just as women have a definite period of gestation, so also do trees and plants. This application of the Stoics' cycle theory to the vegetable kingdom might have been used as an introduction to a more technical treatment of the subject, but this is not the case. Certainly, the next chapter, 45, opens with a strongly emphasized *primum*, which might indicate that Stolo now intends to begin a more detailed description of the cycle; but if this was his idea, he quickly abandons it. We begin with an enumeration of the germination periods of various seed plants. Then follows a description of the nursery, where cuttings, layers, and suckers grow until they are transplanted. We might well have expected such nurseries to be mentioned in the last part of the *satio* step—as a matter of fact, we rather miss it there. Here we are told how to protect the tender seedlings from the cold; we are also told why this should be done, and the reasons are illustrated by examples from Nature. Then, by a somewhat loose association, we hear about plants which, with their flowers and leaves, follow the course of the sun (I, 46): "propter cujus modi res admiranda discrimina sunt natura(e)". After this digression we revert, in Chap. 47, to the nursery with the words: "in semi-

nario quae surculis consita . . .”, and more practical instructions follow, including the rule that grass should be weeded out before it becomes too stiff. The word *herba* now seems to give the association: meadows and grass fields, the cultivation of which is briefly touched upon. Finally, the thread is resumed from the beginning of this part of the subject, and, rather surprisingly, the section ends with a survey of the various terms for the separate parts of corn, straw and ear, with learned etymologies and a reference to Ennius. And this is the end of this strange passage. Its contents are as follows: the theory of Nature’s cycle → the germination periods of grains → the nursery → the growth of roots below ground → other curiosities in Nature → the nursery → weeding its grass → meadows → corn terms. All in all, a curious variation between reflections, practical instructions and linguistic explanations. Actual information on the farmer’s work between sowing and harvesting we do not get. Among the operations we hear nothing about are *sarritio* and the various operations in the vineyard.

Much better information is given in the next step, the *gradus legendi* (I, 49–55). First we hear about the cutting of the hay (49), then about the corn harvest. Three types of cutting are described, such as can be seen in Umbria, Picenum, and the neighbourhood of Rome. We also get a few linguistic explanations and etymologies thrown in. As far as threshing is concerned, we first hear about the threshing floor (51), then about various methods of, and tools for, threshing. We are also told of the importance of setting aside the best ears for seeds. Apparently, this procedure is the only known form for improving seed plants. Then follows winnowing with fan or shovel, and, finally, the gleaning—provided it is worth the trouble. The vintage is also described quite thoroughly (54). The grapes are picked as they ripen. When that happens is a matter of the variety of the grape, as well as of the situation of the vineyard. The grapes are used partly for pressing, partly for eating—some may be dried and eaten as raisins. We get a brief description of the pressing operation, but no technical details of the press itself. Finally, a description of the olive harvest: olives should be picked rather than shaken or beaten down. Olives are used for two purposes, oil and food. We are told especially of the pressing—the oil-mill is mentioned as well as the press—but again without the technical details we are used to getting in Cato. Stolo also knows the two products yielded by the olive, oil and *amurca*, but does not mention the numerous purposes for which the latter can be used. Nor would this be the place for such details; on the other hand, he might have introduced the subject as a digression, since he expressly states that many people are ignorant of the value of *amurca*.

It is evident that this passage is rigorously constructed, giving a precise survey of the methods employed in harvesting the main crops of Italy. They seem to be mentioned in chronological order, beginning with haymaking and ending with the olive harvest. Technical details are avoided, and the description is, as usual, spiced with linguistic explanations and etymologies.

The description of the last two steps in the development of the plants almost has the character of a catalogue. The storing of hay, corn, pulse, and tree fruits

form the *gradus condendi* (I, 56–61). Special attention is paid to various types of granaries with provisions for an ample supply of fresh air, and underground silos of various kinds. We are also told where, in the Roman Empire and outside, the various types are found. The passage on the storing of tree fruits begins with a paraphrase of Cato (I, 58) about the storing of grapes, and continues mainly as a report, using the indefinite verb “putant” (I, 59,1 and 3). Few personal observations and comments are added, giving the passage an air of hearsay. The storing of olives is also described through a paraphrase of Cato (I, 60), and the storing of *amurca* as it is done by *periti agricolae*. Characteristic of the entire passage are the numerous precise names of varieties of vine and other fruit, just as we have found such information in paraphrases on previous occasions.

The sixth, and final, step, the *gradus promendi* (I, 62–69,2), describes how stored crops are brought out of storage for purposes of consumption, sale, or, possibly, for protection against vermin. The form used is a brief enumeration without much systematization. Stolo’s discourse closes with this general observation: seed corn should be taken out at its proper time, and what is to be sold, should be sold when the most profitable prices can be obtained. The story forming the framework of the dialogue is resumed almost as an interruption of the discourse, which, anyway, seems to be finished.

A brief recapitulation of Stolo’s agricultural discourse will show that his introductory division of farming into six steps is not followed by a corresponding exhaustive explanation of each of these steps. As a matter of fact, we hear only about some aspects of agricultural operations, viz. manuring, a little about sowing and planting, time of germination, something about nurseries and meadows, technical corn terms, the harvesting of the main crops, and the descriptions of storing crops and bringing them out again, which sound like second-hand knowledge. In other words, Stolo’s discourse deals with some, but only some, of the points we missed in Scrofa’s discourse. Many points of vital importance to agriculture are mentioned peripherally or not at all, and more technical instructions are rather scarce.

The style is very similar to Scrofa’s. The starting-point is a table with six columns, which are filled in with varying interest—in some cases with an analytic description of the subject, in others with an enumeration almost like a catalogue, or with a number of linguistic explanations. Characteristic are the many reflections of the type, thesis followed by argument or illustration. On the whole, examples and analogies of the most surprising kind play an important part. These features should not only be considered typical of the speakers of the dialogue, but also of the writer of the treatise. Further, references to technical literature appear too frequently to form a natural part of a fictitiously improvised discourse; such references belong to a treatise. It is unreasonable to expect that people, at a chance encounter, can quote and paraphrase long passages of technical literature of a rather specialist kind—even considering the phenomenal training of the memory in Antiquity. In the following, a more detailed examination will be made of the use Varro makes of a number of these methods of approach in his treatise.

II

ANALYTIC METHOD

Manfred Fuhrmann has treated Varro's technique of systematization thoroughly and put in its proper context: the systematic textbook [1]. Clearly, the history of the analytic description goes far back in Antiquity, so that Varro has been able to take over the form of his treatise ready made, so to say. His task, as a technical author, was to divide his particular subject along fairly traditional lines using a fixed set of technical terms, e. g. *divisio/dividere*, *genus/species*, *communis/proprius*. The task of the present writer will be to show how this method is applied.

Already the description of the contents of Book I in Chapter I of these Studies has shown that the analytic outline announced at the beginning (I, 5) is broken as the discourse advances, and new items are inserted. This is due to a certain drift of thought at essential points. In continuation hereof, the present chapter will examine some individual instances of systematization in order to show how Varro analyses a given phenomenon, and to what extent he is, in this, in agreement with the rest of the technical literature. Here, the methodic stumbling-block is the great difference in time between Varro and the other agricultural theorists, above all Columella and Pliny, with whom a comparison is particular fertile. Terminology, as well as farming itself, can in theory have changed so much that a comparison will, as likely as not, be misleading [2]. In this connection I would like to point out that ancient trades seem rather static as far as changes of method are concerned. I hope it will appear from the actual problems dealt with, that the characteristics of Varro's form are not caused by differences of fact.

As mentioned on p. 13, the special function of Chap. 8 is to refute the assertion that the cost of wine-growing is too high. To this end a systematic survey is given

1. *op. cit.*, esp. pp. 69 sqq.
2. The agricultural terminology has been examined particularly by Heinrich Westerath: *Die Fachausdrücke des Ackerbaues bei den römischen Agrarschriftstellern*, diss. 1938. Here the author attempted to establish the exact meaning of the individual words, and it appears that the divergencies from one writer to the next are not overwhelming. The special vocabulary of the rustic Roman language has been conveniently collected by M. G. Bruno: *Il Lessico Agricolo Latino e le sue continuazioni Romanze* (Istituto Lombardo Rend. Lett. 1957, pp. 381–466 and 1958, pp. 921–1035). From this appears the almost incredible toughness of that language. See also Paul Scheuermeier: *Bauernwerk in Italien, der Italienischen und Rätoromanischen Schweiz* (Zürich 1943–56), in which light is thrown, often in astonishing ways, on ancient agriculture.

of various types of vineyards. No actual conclusion is drawn in this dispute, which still occupies Columella's attention (III, 3,1 sq.), but it is left to the reader to estimate the circumstances in which vine-growing is profitable. In order to understand the characteristics of Varro's systematization, it is necessary to outline the various types of vineyards as we know them from other sources.

Ancient agricultural terminology made a distinction between two main types: "vinea" and "arbustum", i. e. vineyards, and vines grown climbing on trees [3]. This appears clearly from both Columella's and Pliny's descriptions. The various types of *vinea* present some discrepancy in the ancient sources. In what appears to be his earliest work, *De Arboribus* (4), Columella distinguishes between three kinds of vineyard: (a) those with trellised vines (*vinea jugata*), (b) those with vines growing along the ground (*vinea humi projecta*), and (c) those with dwarf stock, neither trained nor tied up (*vinea more arborum in se consistens*). In Books III and IV of his great agricultural treatise he describes the vine-growing in Italy, and a number of details prove that the trellised vine is the most common type. Besides, in Book V (4), we hear about a number of methods of cultivation in the provinces: dwarf stock, with simple trellising (*vinea canteriata*), vines with separate supports of reeds (*vinea characata*), and vines growing along the ground (*vinea strata*). Pliny enumerates five categories (Nat. Hist. (XVII, 164), which can be suitably juxtaposed with Columella's as follows:

Plin. Nat. Hist. XVII, 164	Columella De Arb. 4	Columella De R. R. V, 4
(1) vinea sparsis per terram palmitibus	vinea humi projecta	stratae vineae
(2) vitis per se subrecta	vinea more arborum in se consistens	arbusculae brevi crure sine adminiculo
(3) vitis cum amminiculo sine jugo	—	characatae vineae
(4) vinea pedata simplici jugo	} vinea jugata	{ canteriatae vineae
(5) vinea compluviata quadruplici jugo		
		compluviatae vineae

To these may be added the description of vines grown on trees:

Plin. Nat. Hist. XVII, 199	Columella De Arb. 16	Columella De R. R. V, 6
(6) arbustum	arbustum	arbustum Italicum arbustum Gallicum

The difference between the Italic and the Gallic *arbustum* (where Pliny makes no clear distinction) lies, according to Columella, mainly in the type of tree on which the vine climbs. In Gallia rather small trees are preferred, often a variety of maple (*opulus*, *acer opalus*). Pliny also mentions this tree as one among several

3. Cf. the description in Billiard (op. cit., pp. 356 sqq.); for modern parallels reference is made to Scheuermeier, op. cit., pp. 144 sqq., which includes only a selection, however, of ancient methods of cultivation.

supporting trees (Nat. Hist. XVII, 201). There seems to be no clear distinction between vines growing festoon-like from tree to tree, and climbing on one tree only. However, the former seems always to be the case in a Gallic *arbustum*, the special term for which, *rumpotinum*, seems wrongly understood elsewhere by Pliny to be synonymous with *opulus* (Nat. Hist. XIV, 12) [4].

In the light of the above, it seems clear what we may expect of Varro's exposition: a survey of the various types, and comments on the cost in connection with each. Chap. 8 begins with a division of *vineae* into two *species*: *vineae humiles* and *sublimes*. To the latter type belong the so-called *jugatae*, the most common variety in Italy. The attention is then concentrated on the trellised vines. The names belonging to this variety, i. e. its technical terms or components, are two: the vertical props, "pedamenta", and the horizontal connecting stakes, "juga". There are four kinds (genera) of *juga*: rod (*pertica*), reed (*harundo*), cord (*restes*), and vine (*vites*). Each of the four categories is accompanied by examples of its special geographical distribution. Further, there are two ways in which the horizontal connection may be made (*jugatio*): a single horizontal bar (*derecta*), or several bars forming a square (*compluviata*); again geographical examples are given. To this is added a reflection: if these materials can be grown or produced at one's own farm, vine-growing is cheap; if they are obtainable from one's neighbour, the expense is not great. The first category requires a willow thicket, the second reeds, the third a rush bed, the fourth an *arbustum* where trellises can be made of vine-branches (*traduces*). The geographical examples of this are the district round Milan, where vines are grown on *opuli*, and the Canossa area, where they use the fig tree. He then mentions the following four categories of trellis props: a stout post (*ridica*) of oak or juniper, a stake (*palus*) of willow [5], reeds and "natural props" (*pedamentum nativum*), i. e. an *arbustum* in which branches (*traduces*) grow from tree to tree. These are by some people called "rumpi", we are told. Varro then briefly mentions the low-growing vineyards (*humiles*), of which he knows two types: in one the vines grow along the ground, in the other the grape-producing branches are raised from the ground on forked sticks about two feet high. Both types are accompanied by geographical examples. The chapter closes with the advice that the more humid

4. Cf. J. André's comment on the passage (Pline L'Ancien: Histoire Naturelle livre XIV p. 77).
5. "palus e pertica". We expect to be informed about the material used for the stake. The commentators are here preoccupied by what follows immediately, which also presents difficulties of interpretation. The translators solve the problem in different ways: Storr-Best: "a bough made into a stake"; the Loeb-edition: "a stake made from a branch". "Pertica" does not, however, mean simply a bough or branch. In the previous division into *genera jugorum*, *pertica* is mentioned as the first type of horizontal bar, and it is made of willow: "primum genus ... quaerit salictum". For *pertica* of willow used for "juga vinearum" see Pliny (Nat. Hist. XVI, 174); I cautiously suggest that Varro here uses *pertica* = *salix perticalis*; cf. Columella IV, 31, 2 and Pliny Nat. Hist. XVII, 143. This seems, however, rather a singular use of *pertica*, and it is not included under "salix" by André: *Lexique des termes de botanique en Latin*.

the ground, the higher the vine must be trained. That is the reason why vines climb up trees.

It is difficult to arrange this classification in tabular form, mainly because the first division into *vineae humiles* and *sublimes* is followed by the introduction of two different categories of the further division: the component parts of the trellis and the material of which they are made, and the type of joining. This subdivision into “nomina jugi” and “jugatio”—referred to with the words *genus* and *species*—upsets the tabular arrangement. This will appear more clearly from the following table:

vinearum genera	{	humiles	{	terra cubile praebet pars removetur e terra		
				<i>Type</i>	<i>Locality</i>	<i>Material</i>
				pertica	in Falerno	salictum
				harundo	in Arpano	harundinetum
	{	sublimes = jugatae cujus generis nomina:	{	restes	in Brundisino	juncetum
				vites	in Mediolanensi	arbustum
				<i>Term</i>	<i>Material</i>	
				ridica	e querco/junipero	
	{	pedamenta	{	palus	e pertica	
				—	e harundine	
				ped. nativum	arbustum	

As will be seen, there is no room for “jugationum species”. They become a sort of appendix to *juga*, which is the name of the horizontal connection as well as of the entire trellis. It may simply be a question of a mistake caused by this double meaning.

We are even worse off if we try to make out how many types of vineyards Varro mentions. For that purpose this systematic survey is useless—in spite of the introductory words of the chapter. Only by comparing with other sources do we have a chance of finding it out.

In direct contrast to both Columella’s and Pliny’s unambiguous terminology Varro makes *arbustum* a subgroup of “vineae jugatae”, with the curious result that the prop tree turns into a sort of *pedamentum* and the branches of the vine become a sort of bar, a state of affairs not much short of nonsense. Besides, Columella/Pliny’s types (4) and (5) are identifiable with *jugatio directa* and *compluviata*, and their type (1) with Varro’s first group of *vineae humiles*. Types (2) and (3), described by Columella as provincial, have not been taken into account. Their provincial origin might have been the reason why Varro leaves them out, if only he had not mentioned that “humi projectae” are known especially in Spain and Asia Minor. On the other hand, Varro alone mentions the type where some of the branches are raised by forked sticks. Thus, his description cannot be said to be without any independent value as a source.

It seems clear that Varro has been thinking of two things simultaneously: types of vineyards, and their profitability. That is just why it is surprising that

he does not include Columella/Pliny's types (2) and (3). The omission may be due to the fact that the discussion on profitability is a discussion among Italic farmers, in whose regions these types are not used. Introducing radically new methods is even more difficult in the case of an industry which is conservative and tradition-bound. On the other hand, he cannot resist mentioning other methods, which he probably knows from personal experience [6]—although they are of no importance to the question of profitability. Furthermore, the fact that the profitability of vineyards is to be considered necessitates the use of materials as a principle of systematization. Corresponding information on materials used for trellising can be found in Columella and Pliny.

	Plin. Nat. Hist. XVII, 166	Colum. IV, 17
jugum	{ pertica harundo crinis funiculusve	pertica harundo —
	Nat. Hist. XVII, 174	Colum. IV, 26
pedamentum	{ ridica palus reliquorum generum sudes	ridica palus pedamen teres

Here, Varro not only gives all the material of his successors, but also adds an otherwise unknown detail, viz. how reeds are used as *pedamenta*. On the other hand, he gives no information about the geographical distribution of *pedamenta*. An evaluation of Varro's Chap. 8 as a source for our knowledge of ancient vineyards shows it to be a valuable supplement to our other sources. Above all, it tells us of the distribution of the various types of cultivation. Mention should also be made of the fact that it affords an occasion for a joke and a literary allusion [7]. As an example of Varro as a systematist, however, the chapter illustrates the unfortunate way in which he mixes up partly incommensurable quantities. Had he treated the various types of vineyards separately from their profitability—e. g. in a catalogue followed by a discussion on costs—the situation would have been saved.

As mentioned on p. 15, the fourth subdivision of A 1, *de solo*, gives an analytic survey of various enclosures. The heading of this passage was in the original outline (I, 6,1): "quam per se tutus"; the actual passage is headed by the words (I, 14,1): "nunc de saeptis, quae tutandi causa fundi aut partis fiant". This part of the subject is easily arranged in tabular form:

6. For Varro's references to customs and practices in Spain and Asia Minor, see also p. 41.

7. On the difficult expression (par. 6) "ne vindemia facta denique discat (sc. uva) pendere in palma" Keil rightly says in his commentary: "jocose dictum". The expression "ibi dominus simul ac vidit occipitium vindemiatoris ..." may be a play on Cato's gnome "frons occipitio prior est" (agr. 4); cf. Otto: Sprichwörter der Römer, p. 147 s. v. "frons" 3.

	<i>Genus</i>	<i>Definition</i>	<i>Species</i>	<i>Example</i>
saeptum	(1) naturale	quod opseri solet et vivit	{ e virgultis	—
			{ e spinis	—
	(2) agreste	e ligno, sed non vivit	{ palis statutis crebris e<t> virgultis implicatis	—
			{ latis perforatis et per ea foramina trajectis longuriis	—
			{ ex arboribus truncis demissis in terram deinceps constitutis	—
			{ fossa et terreus agger	ut in agro Crustumino
	(3) militare		{ agger sine fossa = murus	ut in agro Re<a>tino
	(4) fabrile	maceria	{ e lapide	ut in agro Tusculano
			{ e lateribus coctilibus	ut in agro Gallico
			{ e lateribus crudis	ut in agro Sabino
			{ ex terra et lapillis compositis in formis	ut in Hispania e<t> agro Tarentino
sine saeptis		satione arborum	{ alii serunt pinos	ut habet uxor in Sabinis
			{ alii serunt cupressos	ut ego in Vesuvio
			{ alii ulmos	ut multi habent in Crustumino

The passage may be said to be a textbook example of a classification of this kind. Saeptum is divided into *genera*, which are briefly defined, apart from (3) where there is no need for such a description. Then follows a subdivision into *species* and, in some cases, geographical exemplifications. It may, of course, be asserted that the classification is now and again too pedantic, e. g. the distinction between *genera* (1) and (2): “quod vivit”, and “quod non vivit”, but it does provide for an extremely clear division of the subject. The section on those *sine saeptis* is undoubtedly to be considered more as an appendix to the actual survey, and ends with some general advice on which trees are to be planted around the boundaries and from which are to be obtained grapes (i. e. if a vine is growing up the tree), foliage for cattle fodder, and firewood.

However, if we consider this passage as part of a manual on agriculture, we cannot but ask where these enclosures are supposed to be placed. Around the farm buildings and farmyard?—or around the entire cultivated area? At the start of the chapter we are told that the enclosures are meant to protect the *fundus* or part of it—nothing else. Consequently, the whole detailed survey seems out of touch with the real aim of the treatise: providing a person who has bought an estate with practical advice. If we want to know how the Romans put up enclosures, we shall have to look elsewhere for information. A fence, hedge or wall surrounding the farm itself, seems to have been a necessity in Roman farming—unless the farm is of the type known from Campania in which the farmyard is in the centre, surrounded by living quarters, stables, cowsheds and store-rooms [8]. Varro himself recommends two farmyards (cohortes, I, 13,3) for large

8. See J. E. Skydsgaard: *Den romerske villa rustica*, pp. 10 sqq.

farms, and in the immediately preceding passages he advises keeping carts and other implements under cover: "haec enim, si intra clausum in consaepto et sub dio . . .". Columella also takes it for granted that there is an enclosed farmyard, e. g. for the cattle (I, 6,4): "ex parte tecta loca, ex parte sub divo parietibus altis circumsaepa".

From a more complete description in Columella (XI, 3,1 sqq.), we learn that a garden is also normally fenced in. Democritus [9] and "vetustissimi auctores" are referred to in support of the advantages of hedges over enclosures of other material. Mud brick will crumble in wet weather, stone walls are too expensive, other types even more so. We are then instructed in a special method of planting hedgerows, a method which has also been handed down under Diophanes' name in the *Geoponica* [10]. Palladius, too, mentions the method [11], probably with Columella as his source. Here and there in Roman literature we get occasional glimpses of the custom, e. g. Cicero's indignation, in a letter to Tiro, at a garden which is not even surrounded by a wall (*maceria*, *Ad. Fam.* 16, 18,2), and the younger Pliny writes that the entire park round his villa in Tuscany is enclosed by a wall (*maceria*, 5, 6,17).

It is much more difficult to get an idea of the norm as far as enclosing the entire estate is concerned. A perusal of the *Corpus Agrimensorum* gives us the best impression, particularly the passages of the *De Controversia Agrorum* "de finibus". The field boundaries mentioned include: marked trees, ditches, roads, hawthorns, streams, marked stones, posts, various kinds of trees, e. g. pine, cypress, and elm; further: cairns, stone walls, brick walls (*maceria*), etc. There are several references to "the practice of the district". The landsurveyor's problem is, of course, whether these boundaries can be used for the purpose of measuring areas in a dispute, but for our purpose they may serve as an illustration of the great variety in practice, which also appears from Varro's geographical indications. In an agricultural textbook, one would naturally expect a discussion on the merits and demerits of the various types, so the almost exclusively descriptive classification does not really serve any practical purpose [12].

We have now looked into the systematic treatment of two separate agricultural problems. In both cases we find an analytic system based on the division into *genus* and *species*, the first case with an error of method owing to the double purpose of the chapter; the second case methodically correct, but some-

9. We have little knowledge of Democritus' work, *Georgikon*; cf. M. Wellmann: *Die Georgika des Demokritos*, *Abhandlungen der Königl. Preussischen Akademie der Wissenschaften*, Phil.-hist. Klasse 1921, Nr. 4.

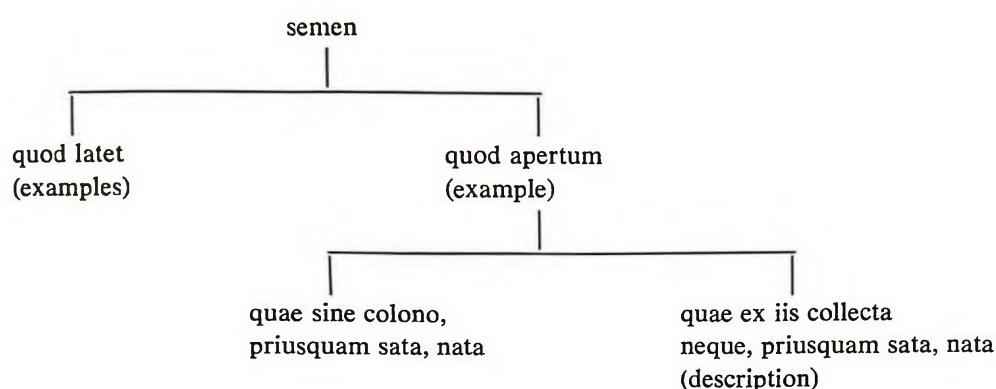
10. V, 44.

11. I, 34, 4.

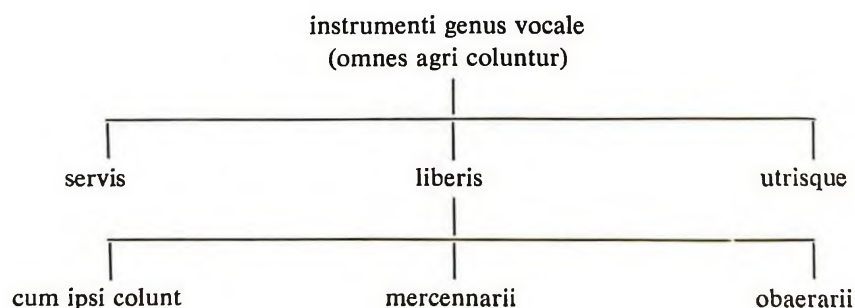
12. Dahlmann assumes (*RE Suppl.* 6, col. 1196), that Varro may be relying directly on the gromatic literature for this description of enclosures. To me this seems doubtful, as there cannot be said to be conspicuous similarities apart from what might be expected when the same subject is dealt with. Moreover, the actual existence of any gromatic literature in Varro's time must be doubted.

how out of touch with practical life. Both cases may serve, so to say, as models of Varro's descriptive analysis. Instances of definitional analyses are, however, to be found as well.

In definitional analysis division and subdivision serve only to define the word or concept of interest in the context. In Chap. 39, for example, sowing and planting are divided into four *genera*, which are then treated separately. The first type is reproduction by seeds, divided as follows (I, 40): *semina* are divided into two kinds, the visible and the invisible kind. Both are illustrated by examples. The visible kind is then subdivided into seed reproduction in Nature and in farming. Of course, it is the latter type alone which is of interest here. In tabular form we get the following schema:



This table of definition is quite characteristic of Varro's method of working. Actually, it must be taken for granted that no reader of an agricultural treatise will be ignorant of what seed is. There is no real necessity for defining it. Rather than that, the purpose is to put the subject in its theoretical context as part of a whole. With this can be compared the division of the *instrumentum vocale* (I, 17); in tabular form as follows:



Then follows a discussion about the case in which two types of labour are employed: slaves and mercennarii. Neither the small farmer nor *obaerarii* are of

any interest in the context, but they serve only as a kind of definition of *mercennarii*, which, of course, need no defining. A treatise with Italic farming as such for a subject would naturally have to describe smallholdings as well, but Varro's treatise is written for the guidance of his wife, Fundania, who has bought an estate; therefore, he only describes the type of farming which is of interest to her—and to other well-to-do people investing in the industry. All the same, for the sake of completeness he mentions the small farm in a definitional analysis of this kind. The introductory discussion on the relationship between cultivation of the soil for crops and cattle breeding (I, 2, 12 sqq.) has the same effect. Had this discussion appeared in the preface, it might have served as a division of farming (*res rusticae*), but this division is given in the preface by the announcement of three books, each covering a different subject: the first *De Agricultura*, the second *De Re Pecuarie*, and the third *De Villaticis Pastionibus*. In its present place the discussion is simply an important means of defining *agri cultura* by eliminating *pastio*.

Behind these definitional analyses, which are often superfluous from a practical point of view, is, of course, Varro's inner compulsion to write exhaustively about his subject. Whether the descriptive analysis does in fact comprise all the *genera* and *species*, we cannot always know. As previously mentioned, the description of the *genera vineae* was not exhaustive, and our sources do not tell us whether there exist types of enclosures other than those mentioned in Chap. 14. Formally, any analysis pretends to be exhaustive, but this does not necessarily make it so. We find an example of a total failure of a proper, exhaustive analysis in the description of the *genus terrae*, where, after a semantic definition of the word *terra*, the description proceeds by multiplication. When we have arrived at 99 *species*, as mentioned on p. 14, and also have to take into account differences in colour, Varro seems to give it up as a bad job and introduces the well-known division into poor, medium, and rich. This puts an end to the exhaustive analysis, which, in any case, would have led to quite impossible combinations, such as e. g. a type of soil which is very sandy, humid, and rich, which is pure nonsense. It is quite in character that Columella also attempts an exhaustive analytic description of the soil, but only to demonstrate that it is not practical, because it will be much too extensive [13]. He, too, mostly sticks to the opposed pairs of qualifying adjectives, which are probably as old as agriculture itself. Without being scientific in the strict sense of the word, they fulfil their purpose perfectly well.

Elsewhere, Varro applies the exhaustive analysis more successfully, e. g. when he outlines the contents of Book II on animal husbandry (II, 1, 11 sqq.), so arranged as to be an exhaustive analysis of the subject. The outline looks in tabular form like this:

13. Columella II, 2, 2. One suspects a polemic against Varro's analysis in the following passage (par. 2): "neque enim artis officium est per species, quae sunt innumerabiles, evagari et ingredi per genera, quae possunt et cogitatione mentis et ambitu verborum facile copulari".

		Pecus								
		minus			majus			propter quod aut ex quo fructus est		
		oves	caprae	sues	boves	asini	equi	muli	canes	pastores
IV partes in parando necessariae	{	aetas								
		cognitio formae								
		semen								
		jus parandi								
IV partes in pascendo necessariae	{	pastio								
		fetura								
		nutricatio								
		sanitas								
pars com- munis	{	numerus								

For every breed of livestock this gives a total of nine points to be discussed, the entire description containing 81 points. When one of the participants in the dialogue objects that e. g. herdsmen and mules have no “fetura” or “admisura”, a jocular conversation ensues, ending with the elimination of *fetura* and *nutricatio* as far as mules are concerned. These are replaced by two sections: *de tonsura* and *de lacte et caseo*. Thus, the outline preserves the 81 subdivisions, which are, on the whole, adhered to, even though some of the animals are dealt with very briefly. For donkeys “sanitas” is left out, and the description of mules is hardly according to the plan at all.

It is surprising to note the extent of the criticism aroused by the composition of this book among the scholars who have studied Varro. It has frequently been cited as an example of Varro’s ridiculously exaggerated urge to systematize, and of his lack of a sense of proportion [14]. Nevertheless, the truth of the matter is that in Book II we possess an extremely well-composed work on animal husbandry, giving us a whole host of useful and accurate facts with much greater precision than the description of *agri cultura* in Book I gives us. It is also worth noticing that the writer has obviously taken pains to vary the dialogue, which contains much more action than in Book I. Many scholars also seem to overlook the slightly jocular note in the conversation when the table of definition is outlined. Especially the third type of “cattle”: “*quae non para(n)tur, ut ex iis capiatur fructus, sed propter eam aut ex ea sunt*” will have caused the reader to smile. This somewhat monstrous category must, of course, be considered in the light of the immediately preceding definition of animal husbandry as “scien-

14. Esp. Detlev Fehling: Varro und die grammatische Lehre von der Analogie und Flexion (Glotta 1957, p. 50 note 2) in which this composition is briefly examined on account of its ludicrousness. Fehling ends: “Und das wird dann in allem Ernst widerlegt”. The fact of the matter is that in Varro the discussion is not carried on “in allem Ernst”, but with much display of humour.

tia pecoris parandi ac pascendi ut fructus quam possint maximi capiantur ex eo...". This definition renders the third category not only justifiable, but also almost necessary. As to the allegation that the grouping of *pastores* with *pecus* is particularly ludicrous, it must be pointed out that herdsmen are not only grouped with cattle, they are cattle, objects to be bought or sold, just like any other form of personal property. This may be a difficult notion for a reader of our time to accept, but such is the case. By way of comparison, it must be mentioned that Book I contains a passage headed *instrumenti genus vocale* with a section *de operariis parandis* (I, 17,3), corresponding to the *probatio boum* (I, 20,1) [15].

In the examples of Varro's analytic method examined here we have observed three types, definitional division, descriptive subdivision of the genus/species type, and subdivision by multiplication. The second and third types have been illustrated by examples of successful, as well as less successful, applications of the method. The definitional divisions seem—as the contemporary reader must also have felt them to be—superfluous, in the sense that they do not clarify something unknown or difficult, but appear rather as pedantic elaboration of something obvious. It is, so to say, definition for definition's sake. Applying the analytic method at every opportunity is so much part and parcel of Varro's method of approach that he just cannot help schematizing. One would, therefore, expect that he would be able to do it with much greater virtuosity than he actually does; we have seen him creating confusion rather than lucidity in the passage on the *genus vineae*, and he had to break off an analytic description in the passage on the *genus terrae*. Whereas Book II adheres fairly closely to the analytic outline planned from the outset, Book I abandons the general plan, first in Chap. 10 with the shift in the meaning of the word "modus". We cannot help asking how such things can happen at all to an experienced writer like Varro. The answer may simply be that he has been pressed for time. If the treatise has been dictated to a scribe, such

15. Probably, Varro's most famous analytic treatment is to be found in the *De Philosophia*, where the number of possible philosophical sects is recorded as 288. This work, which has, of course, caused even more laughter—or indignation—than Book II of *De Re Rustica*, has recently been examined in a monograph by Günter Langenberg: *M. Terenti Varronis liber de philosophia* (diss. Cologne 1957). In this, the fragments are collected, and followed by a thorough discussion of the whole nature of the work. In my opinion, the greatest emphasis should be put not on the 288 sects, but on the reduction of these to one true philosophy. In this way, the exhaustive analysis becomes, in fact, an amplification of the subject of philosophy, the reduction of which shows even more convincingly that there is but one true philosophy, viz. a practical, active, moral philosophy. Thus, the most interesting point is not the actual analysis, but the way in which Varro applies it. I quite agree with Dahlmann (RE Suppl. 6, col. 1260): "Die Absicht bei ihrer Abfassung war anders als die ciceronische: nicht Belehrung seiner Landsleute in einem fremden Stoff, sondern grundsätzliche Begründung der eigenen Anschauung". However, it cannot be denied that even from this point of view, such an application of the analytic method is curious and evidences a predilection for this form far beyond its normal use.

blemishes could easily have occurred, but, of course, the careful writer, on going through the text, will correct them critically. The question remains whether Varro was a careful writer.

Of course, another interpretation is also possible. The treatise is a dialogue, and the troubling discourse is delivered through the mouth of one of the participants, Tremelius Scrofa. Could it be an instance of characterization? To what extent may we identify the writer of the dialogue with the main participants—especially in a dialogue with so much characterization and action as the one in hand? Must we blame, not Varro, but Scrofa for these errors? The answer is anything but easy; but nothing about Scrofa indicates that he is represented as being parodied. He is introduced into the dialogue with much reverence, and in later literature he is mentioned with respect as an agricultural theorist. Columella puts his work between those of Cato and Varro, and characterizes him with these words (I, 1,2) “qui etiam (sc. agricolationem) eloquentem reddidit”. The fact that he is not mentioned in Varro as an agricultural writer has given rise to much conjecture, which will be discussed at a later stage [16]. Varro was certainly acquainted with his work, but there is no apparent reason for Varro to make his immediate predecessor a main character in order to parody him. Consequently, we have to leave this interpretation out of consideration, ingenious though it may seem. However, we must also call to mind that the Varronian dialogue is much more naturalistic than the Ciceronian, and that such breaches of a general outline carefully planned in advance are less objectionable in a dialogue than in a theoretical treatise. Nevertheless, we cannot explain away the peculiarities of Varro’s detailed analyses, confirming the presumption that the loose structure of Scrofa’s discourse is not prompted by artistic aims. Varro wanted to arrange the subject of agriculture as a whole in a schematic form, and used a method which, even if applied with greater care, could hardly be entirely satisfactory. In the following, our attention will be directed towards the question, whether similar features are to be found when Varro employs methods other than that of analysis.

16. See p. 65.

III

EXEMPLIFICATION

It will be evident from the previous two chapters that Varro profusely exemplified his descriptions. Thus, to the systematic classifications of various types of vineyards and enclosures are added precise examples of places where the individual types are found. Elsewhere he takes examples from botany to illustrate some aspect of farming. Finally, part of the general outline is filled in with an exemplified catalogue. One might have thought that this feature, so characteristic of pedagogic description, would have attracted Fuhrmann's interest, but this does not seem to be the case. It is but occasionally referred to [1]. I shall not, in this connection, discuss the literary history of exemplification, which has branches in practically all ancient genres: rhetoric, philosophy, poetry, etc., and would show great affinity to e. g. the stylistic doctrines of images and metaphors [2]. In a textbook above all, however, the example serves its original purpose: to illustrate, explain, and elaborate the phenomenon in question. An examination of some typical Varronian examples will prove that, in his use of examples, he goes far beyond this actual purpose [3].

When, in describing or mentioning a certain phenomenon, Varro refers to the place where that phenomenon can actually be seen, the immediate effect is, of course, to underline or prove that what has been said is true. One might say that the example is a sort of witness [4]. On reading the systematic descrip-

1. Op. cit., p. 191, index s. v. "Beispiele".
2. See e. g. H. Lausberg, *Handbuch der litterarischen Rhetorik*, (Munich 1960), esp. pars. 410–26. Only to a certain extent can Varro's exemplifications be fitted into the rhetorical system, and I shall here make no attempt at such adaption.
3. Linguistically, examples are introduced in numerous ways. The most neutral is the frequently used "ut" or the slightly less frequent "in quo". In numerous other cases examples are used to prove an assertion and are then introduced by "enim" or "itaque". The causal relationship may be so remote, however, that these words have to be translated "for example"; see I, 55, 4: "itaque dominum et <in> balneas et gymnasium sequitur" (sc. olea); cf. *Thesaurus Linguae Latinae* V, 2, col. 584, 66, under "enim". Several other linguistic possibilities could be mentioned, but the main interest here is in the contents. It is in fact a question of whether a definite typology can be firmly established. The dialogue form makes great variation possible – e. g. the rhetorical question: I, 2, 6 sqq.; 39, 1. Considered from the point of view of their contents, such questions must also be regarded as exemplifications.
4. The conception of the example as a "witness" goes back to Aristotle's *Rhetoric*,

tion of enclosures or vineyards with the precise geographical data, one gets the impression that these things do exist, and that the writer—or speaker—has seen them himself. The contemporary reader, who might have known from personal experience one or more of the localities mentioned, would see the examples as an illustration. However, these two chapters show particularly clearly Varro's somewhat casual use of examples. There are no special rules for adding a geographical example. Why, for example, are “genera jugi” exemplified, and not “genera pedament i” (I, 8), and why the last two types of enclosures, not the first two (I, 14)? The effect is not one of complete randomness, each species within the same genus being exemplified, but why within one genus rather than the other? From a practical, agricultural viewpoint these examples are, of course, of no importance, and it is easy to imagine a contemporary reader who would rather have done without such information in favour of a more thorough discussion of the merits of the individual types. Directly informative are, however, the geographical examples in the passage on the “forma fundi naturalis” (I, 6,3), where the various configurations are compared: the lowlands are hot, the uplands cooler and, consequently, more wholesome. The examples of Apulia and Vesuvius clearly show the contrasts Varro has in mind. It is not—as the reader of our time may believe—a contrast between the Alps and the Po basin.

Behind other geographical examples is information of considerable ethnographical interest: e. g. in Campania the soil is so light that cows and donkeys can pull the plough (I, 20,4) [5]; the description of corn harvesting is divided into three main types with the following examples: “ut in Umbria”, “ut in Piceno”, “ut sub urbe Roma et locis plerisque” (I, 50); the threshing machine “plostellum Poenicum” is used, e. g., in Hispania Citerior (I, 52); the storing of corn is illustrated by a number of examples of customs in Cappadocia, Thrace, Carthage, the Ager Oscensis, Hispania Citerior, and Apulia (I, 57). It is a characteristic feature that, in spite of the evident importance of storing grain to agricultural profitability, Varro does not discuss the pros and cons of the various methods to find the best. They are each registered with their find spot, and that is that. The decisive factor for the individual reader in choosing a method is evidently the practice of the district.

In some instances the geographical example has a more specific function through a connection with linguistic differences. In the description of *cella vinearia* we read (I, 13,6): the floor should be sloping towards a reservoir. The reason is that during the fermentation it often happens in Spain that the “orcae”, in Italy that the “dolia”, burst. “Orca” and “dolium” are two names of the large containers in which the wine ferments, and Varro manages to

1394 A. See also the discussion of this point in Ad Herennium IV, praef. 5, and Cicero's definitions of “imago”, “collatio”, and “exemplum” (De Inventione I, 49).

5. The same exemplification is repeated almost verbatim in II, 6, 5. Scheuermeier draws attention to the fact that there are still two main types of plough in Italy, a light type used in Campania and North Apulia, and a heavier type used in Latium and Sardinia; cf. op. cit., I, pp. 94 sqq.

squeeze both names into the description. In almost the same way, we are told in the introduction to the passage "de modo fundi" (I, 10) of the different terms of measurement in Spain, Campania, and Latium. The way the sentences are linked together turns them into a "proof" of the assertion: "some people measure land in one way, others in another."

Similarly, the examples of the grain yields in various districts serve to support the general rule that the amount of grain to be sown should follow the practice of the district: more in rich soil, less in poor (I, 44). On several occasions geographical or botanical examples actually serve as justifications of a maxim, e. g. in the passage on the "genus terrae" (I, 7,5 sqq.): "not all crops can be grown in the same soil, for just as one type of soil is suitable for vines, another for grain, so is the case with others—one is suitable for one crop, another for another." Then follow examples, introduced by "itaque", first of plants behaving differently in different localities (trees which are normally deciduous can become evergreen, and fruit trees can yield two crops a year), then of plants growing in strange places, wholly or partly in water. Finally, Scrofa adds a personal memory: during a campaign he was in command of an army in Gallia Transalpina, where neither vines, olives nor apple trees grew, where people fertilized with marl and had no knowledge of salt. The list of examples has developed into a number of "mirabilia", of which especially the last item of information has not much to do with the starting point. Purely botanic reflection, however, is behind the examples in I, 37,5. The preparation of the soil for planting may consist in various operations, the reason being that some plants have a larger spread of roots than others. The examples are planes and cypresses, the plane, with its large spread, being illustrated by a reference to a plane tree in Lyceum mentioned by Theophrastus. A similar application is found in the passage on the "genus terrae" (I, 6). The three types of configuration are compared, and their differences exemplified by the development of natural vegetation: in the mountains some plants grow bigger and sturdier, e. g. fir and pine, in the lowlands others, e. g. poplar and willow. Moreover, some plants (e. g. the strawberry tree and the oak) are more luxuriant in the mountains, others (the almond and the fig) in the lowlands. It is here a matter of illustrative botanical examples, whereas elsewhere we meet similar examples which have no connection with the subject under discussion. An example of the latter may be found in the passage on the "gradus nutricandi" in the nursery (I, 45); the starting point is the statement that the root of the plant and the parts above the ground do not grow simultaneously, which may be seen from uncultivated trees, which first form the roots, and then produce the part above ground. We then get a list of other discrimina in Nature: the leaves of the silver poplar, the olive and the willow will turn at the summer solstice, while the flowers of the heliotrope will follow the daily course of the sun. These examples only illustrate the wonders of Nature in general, and have no specific purpose in a systematic description. On the whole, the geographical and botanical examples may, therefore, often be said to be connected somewhat loosely with the logical exposition of the particular problem. We certainly do find them as

direct links in the reasoning, but, more often than not, they are almost quite parenthetical, occasionally quite illustrative, and also, in some instances, loose associations. This applies particularly to one or two longish botanical exemplifications professed to be derived from Theophrastus. They are more in the character of learned footnotes.

If we look at the geographical distribution of the exemplification it strikes us immediately that the information is very often derived from areas which Varro must be supposed to know from personal experience. This applies, in particular, to a number of references to conditions in the Sabine country, especially Reate, and the provinces of Spain and Asia Minor, where Varro had seen service himself. Della Corte has collected these references in his biography of Varro in support of our meagre knowledge of the writer's life [6]. Undoubtedly, Varro has made many observations of his own which are passed on in this way. On the other hand, we must realize that much of the information may be derived from earlier literature. When reference is made to the evergreen plane tree near Corthyntia in Crete (I, 7), Varro can hardly have seen it himself, as he uses the expression "dicitur platanus esse", but there is no need to give a complicated explanation of this "dicitur", considering it is found in the literary source, Theophrastus [7].

Another problem is the relationship between the participants in the dialogue and the examples they are made to give. When Scrofa tells us about marl in Gaul, the idea immediately suggests itself that Varro is using knowledge acquired orally—unless the information is derived from the no longer extant agricultural treatise. In other instances it is a much more difficult matter, and we are mostly unable to decide whether the information given is based on the first hand experience of Varro himself, of the speaker, or, possibly, of a literary source. The very fact, however, that Spain and Asia Minor furnish the majority of the examples, must undoubtedly speak strongly in favour of the supposition that Varro, in a number of cases, passes on observations of his own, and here he appears to be a very keen observer. It is hardly possible, though, to decide in each individual case the identity of the source.

Reverting to the cases where the *demonstrans* as well as the *demonstrandum* is within the sphere of agriculture proper, we find another use of the example. This clearly appears in the passage on the "instrumenti genus mutum" (I, 22). Here, first a practical rule is given, then it is exemplified: we should not buy such products as can be made or produced on the farm, such as objects made

6. For Varro's estates in Italy and exemplifications originating from these, see especially "Varrone", pp. 14 sqq.; for Spain pp. 59 sq.; for Asia Minor pp. 76 sqq. For Varro's career see further pp. 96 sqq.

7. As we know from other sources that Varro was in Crete during the war against the pirates, Cichorius (Römische Studien p. 212, note) explains Varro's "dicitur" by the fact that the visit took place in the summer, when it was not possible to see that the tree was evergreen. Della Corte follows this subtle explanation (op. cit. p. 75), but it is quite superfluous if we compare the passage with Theophrastus, cf. pp. 71 sq.

of wickerwork or wood (baskets, threshing-sledges, fans and rakes), or objects of hemp, flax, rush [8] and palm fibre (ropes, cordage or mats). Here, the exemplification serves to curtail a list which could run on *ad libitum*. This is even more apparent when Stolo shortly after refers to Cato's two lists of equipment (agr. 10 sq.). A comparison with Cato's text is instructive. Basing himself on the rather disorderly list, Stolo forms a couple of main groups according to the material, and adds a few implements by way of examples. We cannot find clearer evidence of exemplification used as a means of reduction. Similarly, the use of examples produces a very compact description of the "*gradus praeparandi*" (I, 37,4): to prepare for some plants we must take trenches, dig thoroughly (*repastinare*), or draw furrows, e. g. if we want to plant an *arbustum* or orchard; for other plants we must plough or hoe, e. g. if we want to sow grain . . . Here we are given a list of individual operations with examples, almost the briefest possible way of describing the subject—evidently because the matter is of no interest to the writer. It is not hard to imagine this part of the subject treated as an analytic description, but when Varro chooses this less pretentious method, the reason is probably that an analysis claims to be exhaustive, whereas a catalogue with examples does not. It is the simplest imaginable descriptive method, yet all the same, it does give to those not wholly uninitiated some idea of what it is all about. In Chap. I we have already seen (pp. 17 sqq.) that one whole main section of Scrofa's discourse is constructed in this way, even to the extent that the exemplified groups follow each other rather unsystematically. The parallels mentioned here show that this is a method Varro employs when he is in a hurry to get on. The fact that the subjects thus summarily dealt with are important, such as the preparation of the soil prior to planting and sowing, and the type of soil necessary for the individual plants, proves a certain lack of discernment in planning the description. On the other hand, the purely technical agricultural exemplification is evidence of the writer's considerable technical insight. The very reduction of a list to a few, yet representative, examples is a task that demands great general knowledge.

8. "*juncus*" and "*scirpus*" appear here and in Columella (VII, 9, 7) as two different plants, but we do not know for certain to which plants each word refers; cf. André: *Lexique des termes de botanique*.

IV

THE AGRICULTURAL CALENDAR WITH COMMENTS

Philological method

In Chapter I of these Studies it was established that in section (D) of Scrofa's discourse Varro is probably giving an account of a working calendar already in existence, one used by the overseer as a guide in directing operations at the farm during the owner's absence. One might say that Varro edited this calendar with comments. In the present chapter I shall consider the nature of the calendar, and whether special principles are discernible at work in the commentary.

As previously mentioned, a solar calendar is bound to form the basis of the various operations at the farm. This thesis has been evolved particularly by Mommsen in his classic work, "Römische Chronologie", in which he argues that it might have been this "Bauernkalender", rather than the Egyptian solar calendar, which was the basis of Caesar's calendar reform [1]. Later scholars have adopted a more critical attitude towards this assertion, and there is hardly any reason to doubt that the word "calendar" in this connection must be taken in its vaguest sense [2]. In farming it is by no means a necessity to be able to count days or mention dates with great precision. But it is important to be able to fix the exact times for the various operations. That this is an ancient peasant custom can be seen from Homer's poems, as well as from Hesiod's Works and Days, where a number of important "seasons" are enumerated. In such "natural calendars" the change of the seasons is indicated by simple astronomical observations (the rising and setting of the Pleiades, the solstice, etc.), to which may be added events in Nature (the arrival of the swallow, etc.). Closely connected with these indications are, of course, a series of prognostic signs enabling one to foretell the weather during the coming period. No doubt the majority of such knowledge has never been written down for practical use. The peasant learned about these matters when he was a child, and applied them daily [3]. Only when they acquire literary interest—as to Hesiod—or scientific interest—as to Eudoxus [4]—are

1. Die Römische Chronologie bis auf Caesar(2) (Berlin 1859), see esp. "Das Bauernjahr" pp. 54 sqq., its influence on Caesar's reform pp. 78 sq.
2. Cf. F. K. Ginzel: Handbuch der mathematischen und technischen Chronologie (Leipzig 1911), vol. II, p. 236: "Die uns aus der nachcäsarischen Zeit überlieferten Bauernkalender repräsentieren schon den Schlusspunkt der Entwicklung des landwirtschaftlichen Jahres, die anfängliche, alte Form musste aber nur eine rohe sein".
3. Extensive ethnographical material concerning such nature calendars is collected by Martin P. Nilsson: Primitive Time-reckoning (Lund 1920).
4. Eudoxus of Knidos wrote a treatise, called "The Phenomena", but we know nothing about its contents apart from the fact that it included astronomy proper.

they put down in written form. In a way they are taken out of their proper surroundings and continue their existence in poetry or science. Moreover, in Hellenistic times these two streams meet again in the well-known learned literature, and from then on prognostic poetry remained extremely popular all through Antiquity [5]. Of course, the learned pursuit of these phenomena may have in turn influenced the practical agricultural calendar, but we are unable to determine how or when, because of the latter's unwritten and anonymous character. The reason for putting it down in writing must primarily have been some practical necessity, and it is reasonable to think that this new situation arose when the owner no longer lived permanently on his estate, conducting the operations himself, but left this to an overseer. This kind of capitalist farming must have a fixed plan of operations to be observed, and an agricultural calendar is the only natural solution. Naturally, these calendars may have had a very private character. The only thing required of them was that owner and overseer alike would understand them. They also had to be as simple as possible, with nothing added to make them more difficult than was absolutely necessary. They should not, therefore, be confused with the astronomical *paraepgmata* [6], in which, among other things are included the signs of the zodiac as main divisions of the year, something which is of no importance whatever to the farmer. Nor do we find these private calendars in the technical literature. In Cato we found a simple, progressive description of the most important agricultural operations, but in most cases without any fixed calendar points, though they do occur [7]. Considering the hopeless lack of composition and purpose in Cato's work we cannot, however, conclude that he had no knowledge of a calendar of this kind. In Varro, on the other hand, we find a fully developed calendar for the various operations. However, if we investigate Varro's division of the year, we shall find one or two peculiarities.

5. Especially Aratus' *Phenomena* was highly estimated, and was several times translated into Latin, by Cicero, Varro Atacinus and Germanicus. For a modern appraisal of this work reference should be made to William H. Stahl: *Roman Science* (Madison 1962), pp. 36 sqq.
6. Fragments of such a calendar have been found in Miletus; see H. Diels and A. Rehm: *Paraepmenfragmente aus Milet* (Sitzungsberichte der Berliner Akademie der Wissenschaften, 1904, pp. 92 sqq.). Meton was the first to construct such a calendar, which was put up in Athens in 433–32 B. C. Eudoxus improved it. However, it is uncertain when this calendar system influenced the Roman one. We often find Columella used as the source for the view that the old, Roman agrarian calendar was inspired by Greece. He says (IX, 14, 12): "verum in hac ruris disciplina sequor nunc Eudoxi et Metonis antiquorumque fastus astrologorum, qui sunt aptati publicis sacrificiis, quia et notior est ista vetus agricolis concepta opinio, nec tamen Hipparchi subtilitas pinguioribus, ut aiunt, rusticorum litteris necessaria est". Here, the exact date for "bruma" is discussed, and there is no reason to think that Columella's "vetus agricolis concepta opinio" goes back to the pre-Julian agrarian calendar.
7. Mommsen (op. cit. p. 59) rightly remarks that all agricultural operations are dated according to the season and certain fixed points, whereas the dates of the contracts are stated according to the civil year. This clearly shows that Cato works with two calendars, each belonging in its own sphere.

At the start of Chap. 27 *tempora* are divided into the “genus annale” and the “genus menstruum”. As previously mentioned (p. 18 sq.), it is the former category which comes in for special treatment. First, it is divided into four seasons of about three months each, then into eight intervals of about one and a half months each. Apparently, the eightfold division is obtained simply by halving the seasons. In par. 2 sq. an account is given of the four seasons: *ver*, *aestas*, *autumnus*, *hiemps*; and for each are mentioned some important farm operations. In Chap. 28,¹ the seasons are placed chronologically within the signs of the zodiac, their duration added, and the date on which they begin according to the Julian calendar. In par. 2 follows the eight-interval calendar, divided by simple, fixed astronomic points, the intervals between which, the *intervalla*, are accompanied by an exact statement of their length. The following eight chapters (I, 29–36) make up the actual agricultural calendar, and the individual operations are stated in their respective intervals, with suitable comments. In tabular form the calendar statements look as follows:

<i>Seasons</i>	<i>Fixed Points and Intervals</i>	<i>Dates of the beginning of the Intervals [8]</i>
VER dies primus in aquario length: 91 days ex a. d. VII id. Febr. = 7/2	FAVONIUS Ist intervallum = 45 days [9]	7th February
	AEQUINOCTIUM VERNALE IInd intervallum = 44 days	24th March
AESTAS dies primus in tauro length: 94 days ex a. d. VII id. Maj. = 9/5	VERGILIARUM EXORTUS IIIrd intervallum = 48 days	7th May
	SOLSTITIUM IVth intervallum = 27 days	24th June
AUTUMNUS dies primus in leone length: 91 days ex a. d. III id. Sextil. = 11/8	CANICULA Vth intervallum = 67 days	21st July
	AEQUINOCTIUM AUTUMNALE VIth intervallum = 32 days	26th September
	VERGILIARUM OCCASUS VIIth intervallum = 57 days	28th October
HIEMPS dies primus in scorpione length: 89 days ex a. d. IV id. Nov. = 10/11	BRUMA VIIIth intervallum = 45 days	24th December

8. These are arrived at simply by counting on from 7th February; cf. Keil's comment on the passage.

9. The Mss have XL, which means that the agrarian calendar does not correspond to

A comparison between the two divisions of the year shows clearly that there is no correlation between them—except for the date on which they begin. The four “official” seasons are placed within the Julian year, whereas the actual agricultural calendar is a “natural calendar” without relation to the civil year. It looks as if Varro, with his urge to systematize, has juxtaposed two calendar systems which have nothing to do with each other, viz. the seasons of the Julian calendar and the old farmer’s calendar. In fact, the agrarian calendar was superfluous after Caesar brought the calendar year into agreement with the solar year. The reason why Varro does not convert his calendar into the months of the year is, no doubt, that he employs an agrarian calendar which he sees no need to convert. As mentioned above, a conversion would result in anachronism, granted the dramatic date of the dialogue, yet the Julian dates added for the four seasons are anachronistic in precisely this way.

Apart from Varro’s nature calendar, we know of a few others of the same type. Columella (IX, 14) mentions a calendar of eight intervals intended for beekeepers. We are told that it is taken from Hyginus [10]. Moreover, in his *Natural History* (XVIII, 220 sqq.) Pliny gives a very detailed agricultural calendar divided into eight intervals, but so many astronomical dates and prognostic signs are added that its character as a calendar is obscured. Columella’s proper agricultural calendar in Book XI follows the months, which, for good measure, are divided into two halves, the *idus* being the dividing date. In other words, at some time between Varro/Hyginus and Columella the conversion has been made to the official calendar. The fact that Pliny uses a nature calendar means only that he goes back to an earlier source than Columella, whom he quotes but rarely [11].

Some help towards the understanding of the dating of this conversion is given by the two altars with the calendar inscriptions, usually referred to as the “me-

the 365 days of the solar year. The editors have tried to remedy this in various ways. Keil and Goetz both follow Schneider’s conjecture: XL(V), which seems to be the easiest way to a useful result. Mommsen considered Varro’s intervals to be so corrupt that he in fact made no use of them (cf. op. cit. p. 65, note 91), and other scholars concerned with chronology also seem disinclined to accept Varro’s statements. The result is that, using different principles, they alter the periods of the intervals, or harmonize with dates transmitted elsewhere, cf. e. g., the hypothetical table in A. Rehm: *Der Römische Bauernkalender und der Kalender Caesars* (Epitymbion Swobodas 1927, p. 227). If, as here, Varro’s statements are taken seriously, and Schneider’s correction is accepted, then no connection can be established between the eight divisions of Varro’s year and Greek astronomy.

10. Julius Hyginus was one of Augustus’ freedmen. For his agricultural treatise cf. Reitzenstein, op. cit. pp. 18 sqq., in which, however, he is placed a little too early; see Lundström in *Eranos*, Vol. 15, pp. 161 sqq. See also p. 123.
11. F. Münzer: *Beiträge zur Quellenkritik der Naturgeschichte des Plinius* (Berlin 1897, p. 36), explains this: “So finden wir Columellas Namen in der Naturgeschichte nur da, wo sich aus seinen eigenen Worten oder aus der Vergleichung mit anderen seine Selbständigkeit erkennen liess und ihm die volle Verantwortung für eine Nachricht bleiben soll, und Plinius verfährt also bei der Nennung des Autors ganz verständig und mit bewusster Absicht”. Cf. p. 105.

nologia rustica" [12]. In fact, they cannot—as has often been done—be regarded as working calendars. If they were such, operations to be carried out during the month of April could not have been omitted merely because of lack of space. Thus, the agricultural operations are of secondary importance in relation to the unknown cult use of the altars.

Apart from the name of each month, the number and length of its days, its zodiacal sign and the name of a deity, the inscription mentions agricultural operations and several festivals belonging to the month. As not one of the festivals of the Imperial House is mentioned, several scholars have concluded that this calendar system dates back to a republican source [13]. However, the combination of agricultural operations and names of the months may rather be said to indicate a post-Julian date, which gives us a short span of years between 45 B. C. and the time of the spread of emperor worship. The fact that Sextilis is called August does not necessarily mean that the source of the two inscriptions is later than 8 B. C., in which year this month is named after the emperor. Such a small correction could easily be inserted. Wissowa has shown very convincingly that the common source of the two inscriptions was also epigraphical [14], and as the two menologies can be dated to the first century A. D., the practice of decorating altars and the like in this way cannot have been uncommon, in spite of the fact that only two specimens are preserved.

I will also be of interest to establish where in Italy this conversion to the Julian calendar was made. In Wissowa's opinion, the dating of the farm operations was well suited to the surroundings of Rome [15], but A. L. Broughton has later proved that the dating of, e. g., an important operation like the corn harvest is better suited to the conditions in north Italy as described by the agricultural writers [16]. With the great differences in climate still existing in Italy, conversion must have been made locally in many places at almost the same time, as the same calendar could by no means be used everywhere. The fact that the distribution of the agricultural operations in the two menologies is suited to northern Italy, whereas the inscriptions themselves come from Rome, is yet another indication that their function as calendars was only of a secondary nature. Differences in the old agricultural calendars can also be ascertained by comparing the fixed astronomic points in Varro, Columella/Hyginus and Pliny. They are not identical. Finally, it is worth noticing that the starting point varies from one writer to the next. Varro begins his calendar in early spring with the advent of Favonius, the bee calendar begins with the vernal equinox, and Pliny begins with a description of the autumn sowing. There could hardly be clearer evidence that

12. *Menologium Colotianum*, now in the National Museum of Naples, CIL VI 2305. *Menologium Vallense*, the original lost, CIL VI 2306.

13. A. D. Nock, *Roman Army and Religious Year* (Harvard Theological Review, 1952, p. 194), accepted by K. Latte: *Römische Religionsgeschichte*, p. 2.

14. *Römische Bauernkalender*, Apophoreton, 1903, pp. 29 sqq.

15. *Ibid.* pp. 42 sqq.

16. *The Menologia Rustica*, *Classical Philology* 1936, pp. 353 sqq.

there is no question of a proper calendar in the technical sense, but of a practical division of the solar year with a view to distributing the various operations within it.

Summing up, we come to the result, that, in the chapters introducing the agricultural calendar (I, 27 and 28), Varro first gives an account of the seasons of the official calendar, adding a few farm operations. In this way, the passage becomes an introduction with exemplification [17]. Whether the fixing of the seasons in accordance with the Julian calendar is based on research carried out by Varro himself, we cannot tell. As we know, he has studied problems connected with the calendar in his research into the history of religion [18]. However, the fourfold division of the year is quite irrelevant to the ensuing agrarian calendar of eight periods, which is not brought into agreement with the Julian calendar. It follows the introduction in a somewhat disjointed manner.

Each of the eight chapters comprising the actual calendar begins with the number of the interval, the two fixing points, and these words: Chap. 29: *haec fieri oportet*; Chap. 30: *haec fieri*; Chap. 31: *haec fieri debent*; Chap. 32: *plerique messem faciunt*; Chap. 33: *oportet . . .*; Chap. 34: *incipere scribunt oportere serere*; Chap. 35: *haec fieri oportere dicunt*; Chap. 36: *haec fieri oportet . .*

It appears clearly from these introductory words that a certain variety has been sought, but the individual operations are enumerated in the accusative and infinitive, in one case (I, 29) with an object clause. Even Chap. 32, in which the opening words do not permit this linguistic possibility, continues with “*arationes absolvi*”, as if the opening words were of the usual kind. Thus, the working instructions are easily distinguishable from the comments. A special problem is presented by chapters 34 and 35, with their introductory verbs: *scribunt* and *dicunt*. It may, of course, be a purely stylistic variant, or we may, with Ursinus

17. It should be noted that the dates of the civil year are used only here. Both in Book II on animal husbandry and in Book III on villaticae pastiones the fixed points and intervals of the agrarian year are used; see II, 4, 7: the covering of sows “*a favonio ad aequinoctium vernum*”; II, 7, 7: the covering of mares “*ab aequinoctio verno ad solstitium*”; II, 11, 6: sheep-shearing “*inter aequinoctium vernum et solstitium*”; III, 9, 9: the hatching of chickens “*<ab> aequinoctio verno ad autumnale*”; II, 2, 11: grazing of sheep “*ab vergiliarum exortu ad aequinoctium autumnale*”; III, 7, 9: pigeons do not breed “*a bruma ad aequinoctium vernum*”.

- For this reason, attempts at supplementing a supposed lacuna in the text of III, 10, 2 must be rejected. Keil supplements as follows: “*anseribus <ad> admittendum [iis] tempus est aptissimum a bruma, ad pariendum et incubandum <a Kalendis Februariis vel Martiis usque ad solstitium>*”. Although almost the same wording is to be found in Columella (VIII, 14, 3), there is no indication that the date was so given in Varro. If a supplement is necessary, I suggest *<a favonio>*, but the question is whether the context demands it. It may be imagined that “*admissura*” and “*incubatio*” are not separated, but together occupy a fairly long period “*a bruma usque ad solstitium*”.
18. Unfortunately, we have little knowledge of Varro's chronological studies. In the *De Gente Populi Romani* he put the foundation of Rome in Olympiad 6,3 = 754/53 B. C. Earlier, however, Atticus in his *Liber Annalis* had arrived at the same year, and we do not know what the relationship was between the two works. See Dahlmann, RE Suppl. 6, coll. 1237 sqq.

and Gesner, expurgate the words as glosses [19]. However, these verbs might also indicate a source other than the actual working calendar. A closer examination of the two chapters will confirm this possibility. Let us look at the chapters separately.

Chapter 34. In the introductory words the date of the end of the interval, "vergiliarum occasum", is left out, because the sowing period covers two intervals. Sowing should be done until the 91st day, we are told, and it is advisable not to sow after the winter solstice. In other words, the period reckoned with between the autumnal equinox and winter solstice is here 91 days. However, if we examine the length of this period in Chap. 28,2, we find that the two intervals of the period are 32 and 57 days long respectively, in other words a total of 89 days. This fact has occupied several commentators. It may, of course, simply be a mistake on Varro's part, but it may just as well be caused by another source than the main calendar being used here [20]. There follow, still in reported style, the reasons why this period is the period for sowing, and then the words: "fabam optime seri in vergiliarum occasu", a statement which puts the operation within a much more restricted interval than usual [21]. Only now do we get the traditional statement of the interval with the words: "uvas autem legere et vindemiam facere inter aequinoctium autumnale et vergiliarum occasum ...". The composition of this chapter might indicate that the first part is based on another source with another time calculation than the one otherwise used. This is confirmed by the following chapter.

Chapter 35. Most of the chapter is about flowers—which do not really belong in an agricultural calendar—first in the grammatical construction we might expect: "serere lilium et crocum". Among the agricultural writers Palladius is the first to mention the planting of lilies, but he puts it in February (3, 21). Then fol-

19. In his comments on this passage Schneider points out this bold possibility, but he himself follows, of course, the text of the Mss. Keil does not even mention the suggestion.
20. As previously mentioned (note no. 9), the durations of the intervals are out of order. If we accept Keil's emendation and only alter the length of the first interval, we are faced with two different calculations in Chap. 28,2 and Chap. 34. Others, however, have tried to alter more of Varro's statements of duration, in order to fit in the statement of Chap. 34. It may also be noted that the length of the sowing period coincides with the length of the autumn (I, 28, 1), but as this season, according to Varro's own statement, is followed by winter a.d. IV.id.Nov., it is hardly possible to maintain that the mistake has arisen in this way. The discrepancy between the numbers of days from the autumnal equinox and winter solstice is not in itself sufficient grounds for assuming that Varro relies on two different calendars, as it may simply be a matter of a slip, but taken in connection with the following observations it does support the solution advanced here.
21. In the last two books also we find such more precise statements of time. III, 16, 34 deals with the extracting of honey: "primum putant esse tempus vergiliarum exortu[m], secundum aestate acta, antequam totus exoriatur arcturus, tertium post vergiliarum occasum". II, 9, 11, about dogs: "principium admittendi ... veris principio ... pariunt circiter solstitium".

low instructions for taking cuttings from roses, expressed in the indicative, and in the same form follows a warning against planting "violaria" [22]. Finally, and again in the accusative and infinitive, we are given the information that thyme should be transplanted between Favonius and the rising of Arcturus. This is certainly information of the most surprising sort in a description of the interval placed at the beginning of winter. According to Columella, Favonius begins blowing on VII idus febr. (XI, 2,15), and Arcturus is visible at sunset on VIII kal. mart. (ibid. 22). So in this sentence we are in February—as we were at the planting of the lily, as here indicated—and, as in the preceding chapter, the time is indicated much more precisely than in the rest of the calendar. We even find the operations in question wrongly placed, but the mistake is hardly due to ignorance, as the planting of thyme is given a precise date. It must be due to negligent use of the information contained in the source. Finally, we are told of operations undoubtedly belonging to this interval, in the accusative and infinitive, as was to be expected: "fossas novas fodere . . ."; and this brings us back into the calendar proper. The addition that these operations are not to be carried out during the fifteen days preceding and following the winter solstice, I take to be a comment on Varro's part, as this interruption of the year's work has been handed down to us in many other sources [23]. It is probably a question of some superstition.

From the above it will appear that the words "scribunt" and "dicunt" must relate the first halves of the two chapters to a source other than the calendar normally used. This other source has been used so carelessly that rather a serious misdating is the result. The reason why Varro looks elsewhere for information may simply be that he wants to tell us something about the flowers in question, and they have not been mentioned in his main calendar; whether he refers to the same source we cannot know, nor whether there is any connection with the word "dicunt" in Chap. 31, 1. There also we get a slightly different presentation of the first operation, and the "dicunt" of the following causal clause may, of course, refer this to a literary source, or possibly just to a rustic proverb. The question of Varro's relationship with the literature available to him will be examined in Chapter V of the present Studies.

In the light of the experience gained, however, it will be necessary to test the rest of Varro's information in the agricultural calendar, to see if there are other points that may be characterized as mistakes. It will be a reasonable procedure to make a comparison with Columella's big agricultural calendar in XI, 2,

22. The "viola" in Antiquity denoted various species, including the violet and the stock, see André: *Lexique des termes de botanique en Latin*.

23. Cf. Chap. 34, in which we are told that it is considered inadvisable to sow around the time of the winter solstice, quoted by Pliny (Nat. Hist. XVIII, 204). For the suspension of work during that period cf. also Columella II, 8, 2; XI, 2, 95. A fragment of Lucilius also refers to this custom (Warmington 838–39): "anno vertenti dies/tetri miseri ac religiosi". At midsummer we have a suspension of the ploughing, perhaps for similar reasons; cf. Columella II, 4, 4.

which is by far the best source we have, Columella being generally accepted as the best authority on ancient agriculture.

For practical reasons the best method will be to go through Varro's agricultural calendar, not according to its periods, but according to the instructions for the main crops.

Fields. The most important work before sowing is ploughing, and because of the types of ploughs used, the Romans had to plough several times [24]. The first ploughing is placed by Varro in the second interval, between the vernal equinox and the rising of the Pleiades at the beginning of May. This is consistent with Columella's calendar, where humid and rich soil is first ploughed during the second half of March (par. 32), and the work can be put off even till the beginning of June (*pro conditione regionis et caeli*, par. 46), possibly still longer. When Varro, in his fourth interval, says that ploughing must now be completed (*arationes absolvi*), he, too, probably thinks of the possibility of the first ploughing not yet being over. In Columella, the first ploughing can already have begun in the second half of January, but mostly on dry and rich fields (par. 8), and it is hardly common practice.

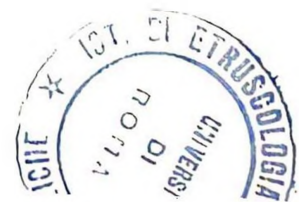
In Varro's calendar, the second ploughing comes in the fifth interval, between the Dog Star and autumnal equinox. Here, Columella must, of course, follow his own previous instructions. Where the first ploughing is in January, the second ploughing must follow at the end of March (par. 32). Where the first ploughing is later, the second may well take place during the first half of September (par. 64), when there will even be time for a third ploughing if the first was begun early. This third ploughing should not be confused with Varro's, which is a ploughing in of the sown grain [25]. As will appear, Columella's calendar takes various qualities of soil into consideration, whereas Varro's seems to deal with one average quality. Moreover, it is clear that both calendars mainly deal with the ploughing of fallow fields. When the soil is ploughed several times from early spring to early autumn, no crops can, of course, be grown. According to Columella's calendar, there will be time to sow summer corn or millet, if the soil is first ploughed in January and the second time in March. Varro makes no reference at all to these crops in his calendar; only millet is mentioned [26], but even that outside the calendar, and it gives the impression of being rather unimportant.

The times for ploughing, as they appear from the calendars, raise the funda-

24. For the Roman plough, reference is made to Drachmann, s.v. "Pflug" in RE, vol. 19, 2, and Aitkin: Virgil's Plough, *Journal of Roman Studies*, vol. 46, 1956.

25. See Chap. 29, 2 "liratio". Characteristically, Varro is well acquainted with the three regular ploughings. They are not mentioned in the calendar, but in the introduction, Chap. 27, 3: "neque ea(m) (sc. terram) minus binis arandum, ter melius". The context clearly shows that he does not here refer to "liratio".

26. Milium (*Panicum miliaceum*) Chap. 23, 7 (paraphrase of Cato); 45, 1 (period of germination); 57, 2 (when threshed will keep for 100 years!). Panicum (*Setaria Italica*) Chap. 23, 7 (mentioned with the above in the paraphrase of Cato).



mentally important question of whether a simple rotation of crop/fallow was common Roman practice. The question has been discussed frequently, and the difficulty is that our sources themselves discuss the pros and cons of the various rotations, but they do not tell us what the standard practice was. For the simple crop/fallow rotation autumn was the normal time for sowing, and, as mentioned, Varro's calendar places it in the 91 days after the autumnal equinox, which takes us on to winter solstice, after which no sowing should take place. In cooler areas Columella places the beginning of the sowing during the first half of October (par. 74). It should be completed around 1st December, "if a not very large area is to be sown" (par. 90), which allows us to assume that it can be extended beyond that date. Summer corn (*trimestris*) is sown in early spring, but, as already mentioned, Varro's calendar tells us nothing about this. On the other hand, he is alone in placing the sowing of a number of varieties of pulse in the fourth interval, between the summer solstice and the Dog Star. In Columella these varieties are sown from the middle of September (par. 71), while Pliny (*Nat. Hist.* XVIII, 314) gives the most advisable time as about a month earlier. Here the discrepancy is so obvious that one must ask oneself whether the explanation could be a rotation of crops. When mentioning the autumn sowing itself, Varro does not specify the plants to be sown, but he makes special mention of the autumn sowing of the broad bean (Chap. 34). Midsummer sowing of pulse would fit in very well with a rotation of one year's corn crop, the harvesting of which is to be immediately followed by the sowing of pulse. Pliny may be referring to this rotation of crops in his brief survey of various types (*Nat. Hist.* XVIII, 191) [27]:

- (I) si fuerit illa terra, quam apellavimus teneram, poterit sublato hordeo seri milium, eo condito rapa, his sublatis hordeum rursus vel triticum, sicut in Campania, satisque talis terra aratur, cum seritur.
- (II) alius ordo ut, ubi adoreum fuerit, cesset quattuor mensibus hibernis et vernam fabam recipiat ita ut ante hiemalem ne cesset.
- (III) nimis pinguis alternari potest; ita fit ut frumento sublato legumen tertio seratur;
- (IV) gracilior et in annum tertium cesset.
- (V) frumentum seri quidam vetant nisi in ea quae proximo anno quieverit.

The greatest affinity to Varro's summer sowing of pulse is presented by Pliny's group (III), as the words "frumento sublato", like the similar expression in (I), must mean that a new sowing follows immediately upon the harvesting of the preceding crop. The word "tertio" must mean that the pulse is sown in the third rotation, counting from the fallowing, as group (IV) shows that for group (III) also the third year is fallow. The procedure of sowing pulse in almost un-

27. The best discussion of the entire problem remains Adam Dickson: *The Husbandry of the Ancients* (Edinburgh 1788), vol. I, pp. 288 sqq.

prepared soil, followed by ploughing in, is known from several sources, but, of course, there is time to plough the area in question before the summer sowing, if desired. According to the present interpretation, this will never be the normal way of growing such pulse, and, consequently, the areas involved cannot be very extensive. The pulse are probably intended to be cattle food. Palladius advises sowing more of the same pulse for food at the beginning of September, along with other crops which can be grazed over several times (10, 8), and also the above passage in Columella (par. 71) mentions sowing for food [28]. So the normal time for sowing will be autumn, whether the soil has been fallow the previous year or has been freshly ploughed after harvesting.

In the eighth interval, after the winter solstice, Varro advises draining of the fields, corresponding to Columella's instructions to clean out the old ditches and dig new ones from the middle of October (par. 82). As at any rate the maintenance of old ditches is the kind of operation that can be carried out on holidays, and the danger of erosion is greatest in winter, Varro's positioning of this operation is quite understandable, but Columella, being a very careful farmer, begins early.

If the weather is dry, the sown fields can be weeded (*saritio*) during the same period; if not, Varro places this operation in the first interval between Favonius and the vernal equinox. Columella puts it in the period before the 1st February without referring to the weather (par. 9), but advises weeding again at the beginning of March (par. 26). Then comes the removal of the larger weeds with a knife (*runcatio*), placed by Varro in the second interval between the vernal equinox and the rising of the Pleiades, whereas Columella does not start until the beginning of May (par. 40). Of course, the repeated *saritio* may well explain this small difference in time [29].

According to Varro, the corn harvest takes place during the fourth interval, between the summer solstice and the Dog Star, corresponding to Columella, who begins the harvest of barley and pulse in the second half of June (par. 50), while in colder areas the harvest is not completed until the second half of July (par. 54). The straw should then be cut and staked within 30 days, corresponding to Varro's placing of this operation in the fifth interval, between the rising of the Dog Star and the autumnal equinox. Thus, the differences between these instructions for the fields seem not so serious that they cannot easily be explained.

Pastureland. In a climate with dry summers, grass fields will be very valuable, and that is why all the Roman agricultural writers attach to them an importance

28. After mentioning the sowing of a number of plants, Columella continues: "nec minus in pabulum vicia nunc demum conseruntur. Tum etiam lupini haec erit praecipua satio, quod quidam vel ab area protinus in agrum deferri putant oportere". The words "nunc demum" suggest to me a polemic against an earlier sowing of "vicia", which entirely fits the precepts found in Varro.

29. *Saritio* as many as three times is mentioned by Varro in an exemplification (I, 18, 8): "ut fecerunt ii in sariendo iterum et tertio".

which seems surprisingly great to the reader of to-day. *Pratum* denotes all grass fields, irrespective of situation. Columella distinguishes between *pratum siccanum*, an ordinary meadow, and *pratum irriguum*, an irrigated meadow (II, 16,3). As far as we know, the Romans did not avail themselves of irrigation machinery as we know it from Egypt [30]; they took the water from some river, or from an aqueduct (if there was one), utilizing the natural fall of the ground. The work connected with the meadows is not great. For the major part of the year the cattle will be grazing there, but if there is hay to be cut, a period of undisturbed growth is required. Varro places the cleaning of the meadows (*purgatio*) in his first interval, between Favonius and the equinox. This operation is explained by Cato as follows (agr. 50): “cum prata defendes, depurgato herbasque malas omnis radicitus effodito.” “Defendere prata” simply means to drive the cattle off the pastures [31], which, according to Varro, should be done in the second interval, between the equinox and the rising of the Pleiades. Then, in the third interval until the solstice, we get haymaking, after which we can irrigate again, and then gather a second hay crop in the fifth interval, between the Dog Star and the autumnal equinox. The cattle will then probably be able to graze again.

According to Columella’s calendar, *purgatio* and *defensio* may take place in the latter half of January in sunny and humid places with poor soil (par. 7); in dry and warm places near the sea these operations should be put off till early February (par. 15), and in cold places till after the Minerva festival, the Quinquatria (19th–23rd March) (par. 27). Haymaking can begin about 1st May (par. 40), but may be later, depending on when the cattle were driven off. Columella’s calendar does not mention irrigation or a second hay crop, but this possibility is taken for granted in his systematic description of pastures (II, 16 sqq.), where he speaks in favour of grass fields without irrigation. Further, Columella’s calendar says that the grass should be fertilized at the end of January (par. 18); the question as to whether Varro’s calendar contained similar instructions, depends on one’s attitude to a somewhat bold supplement by Keil [32].

Again we find considerable discrepancy between the two calendars. Columella takes into account various differences in soil and climate, whereas Varro’s instructions are mostly concerned with specific conditions.

30. Apart from Archimedes’ famous “water screw”, we now also have evidence of the chain pump in a sepulchral painting from Alexandria, published by Henry Riad, *Archeology*, vol. 17 (1964), pp. 169 sqq. The irrigation machinery of Italy as described during recent years, may date back to ancient models, but may equally as well have been introduced by the Arabs during the Middle Ages. Cf. Scheuermeier, *op. cit.* I, pp. 76 sqq.

31. Cf. I, 37, 5: “item praeparatio siquae fit in pratis, id est ut defendantur a pastione, quod fere observant a piro florente”.

32. Chap. 29 contains the meaningless reading “putari in pratis”, which Keil supplements, from Columella XI, 2, 16 and 18, “putari <arbusta, stercorari> in pratis”. However, it is doubtful if the text can be thus supplemented, cf. note 17.

Vineyards. The annual operations in the vineyard are most clearly described from vintage to vintage. In Varro's calendar the *vindemia* is placed in the sixth interval, between the autumnal equinox and the setting of the Pleiades. In Columella it begins in the first half of September in warm localities near the sea (par. 64), but in most places it comes a fortnight later (par. 67), and in colder districts not until about 1st October (par. 74). In both calendars, pruning and layering follow immediately upon the vintage, and may go on far into March (Varro's first interval until the vernal equinox; Columella par. 26). In the same interval Varro puts the removing and cutting of roots emerging above the surface (*ablaqueatio*), which in Columella begins just after the vintage. Characteristic of Columella's treatment of the soil are the repeated, thorough preparations with plough or hoe. The first preparation must be completed by the middle of April (par. 35) even in cold localities; in the second half of May follows the second preparation before the flowering (par. 44), and even large areas of vines should be completed by the summer solstice (par. 47). In July there may apparently follow a third preparation (par. 55), which must take place either early in the morning or in the evening, because of the heat. Finally, a fourth preparation, the so-called *pulveratio*, may take place just before the vintage (par. 60). Varro does not mention the first digging at all, but places the second between the summer solstice and the Dog Star, i. e. at the same time as Columella's third digging. *Pulveratio* is not mentioned. According to Columella, young vines need even greater attention. They have to be dug through once a month from March till the middle of September (par. 41). For the young vines Varro mentions a first digging in his third interval, between the rising of the Pleiades and the summer solstice, and a second digging between the summer solstice and the Dog Star, at the same time as a second digging of the old vineyard, the first digging of which seems entirely forgotten!

Also important for wine-growing is the thinning out of leaves and shoots, *pampinatio*. This operation is put by Varro in the third interval, between the rising of the Pleiades and the summer solstice. Columella's calendar reckons with two thinnings; the first begins in the first half of April (par. 38), the second in the second half of May, and should be done in several stages (par. 44). Columella's working plan for vineyards is thus much more detailed than Varro's, but it must be remembered that wine-growing seems to have developed considerably between Varro and Columella, who is particularly interested in this branch of farming. Varro's instructions may very well be closer to normal practice than Columella's.

Olive Plantations. Considering the very important part played by olive-growing in the economy of ancient Italy, it is surprising that Varro's agricultural calendar only mentions it once, viz. in the second interval, between the vernal equinox and the rising of the Pleiades. New trees are then planted and old ones pruned a little (*interputare*). Columella, of course, mentions all the most important operations, such as *ablaqueatio*, *stercoratio*, etc., and also the time for the harvest. It may be an oversight on Varro's part, but it is a remarkable one.

Nurseries and Orchards. Varro's calendar contains but little information about the cultivation of other trees and the work in the nursery, where cuttings and layers are tended until they are transplanted into orchards etc. The planting of the nursery is placed in the first interval, between Favonius and the vernal equinox, and no distinction is drawn between the various types of trees. Columella plants cuttings of fruit trees in the nursery between the nonae and idus of February (par. 16), and in the first half of the same month cuttings of the vine can be planted (par. 17), although the second half should perhaps be preferred (par. 22). In any case, the planting of the nursery may be extended (cf. pars. 26 and 30); for example the latest date for planting olive cuttings is the first half of May (par. 42). According to Varro, the transplanting takes place between the autumnal equinox and the Pleiades, unless it is put off till spring in cold localities. However, Varro's expression, "serere poma", is ambiguous; "serere" may mean to sow, to plant cuttings or to transplant young trees. A comparison with Columella's calendar will clearly show that the word is to be taken in the last sense here. In Columella the work is put in the second half of October (par. 79), but can also be done early in February (par. 16). Varro's precept that willows should be planted in the first interval, between Favonius and the vernal equinox, can be compared with Columella par. 19. Thus, on this point also Varro's calendar is in accordance with Columella's.

Summing up, we must conclude that Varro's calendar instructions are in reasonable agreement with Columella's [33]; with the important difference, however, that Columella takes all cultivated plants from all over Italy into consideration, whereas Varro's instructions are much more simple. On account of the long intervals it is not possible to determine more accurately the type of soil Varro's instructions are designed for. However, his choice of cultivated plants to be dealt with, indicates the typical *villa rustica*, with corn, pulse, vines, and fruit-trees. The rather unfair treatment of olives implies that the calendar on which Varro bases his instructions, has not been used at a farm with many olive trees, but we know that it was nothing unusual for olive trees to grow rather sparsely on an estate, and this may well be the reason for Varro's summary treatment. It is also remarkable that corn sown in the spring is not mentioned. This seems to indicate a rather simple rotation of crops. Further, there are traces of sources other than the main source being used, especially in Chapters 34 and 35, and perhaps also 32. This incorporation of foreign material results in errors in the calen-

33. The problem might, of course, have been dealt with differently, so that the emphasis was placed on the differences between Varro's and Columella's calendars which certainly do exist. The present examination might be blamed for endeavouring too much to harmonize the information of the two calendars. However, when we know that the carrying out of important farm operations may easily differ in time by a fortnight or more from one field to the next, we should not even expect the two works to coincide entirely, even if they had been written for the same district. Besides, an exact comparison is made difficult by the use of the two different calendar systems.

dar, and leaves other tangible traces, implying that Varro has not taken overmuch trouble to fit together his pieces of information. Similar peculiarities will be discussed in the next chapter.

If we now turn to the comments on the calendar, we are at once struck by the great variations in the distribution of Varro's comments on the various intervals. One chapter, 33, has the simple form of the calendar without any additions, whereas the others are supplied with information of a more or less relevant kind. Two chapters, 29 and 31, are supplied with extremely copious comments, whereas the notes in the other chapters are shorter. The principle is everywhere the same: during the enumeration of agricultural operations he stops at one, to which the comment is added, and then the enumeration proceeds. Chap. 31 may be taken as a case in point: agricultural operations, explanation of "occare", another operation (pampinatio) with comment, another operation ("omne pabulum . . . secari" (par. 4)) and etymological explanation of the names of the separate forage plants, then more operations with comments.

The commentary can be very erratic, as e. g. Chap. 29, where the explanation given far exceeds the requirements of the calendar text. The comment is made on the operation of *saritio*; it is not, however, the operation itself that is explained, but the word "seges". Then follow definitions of the related words: "arvum" and "novalis". As the difference between these terms is due to a difference of ploughing, three types of that operation are explained: "proscindere", "offringere" (= "iterare"), and "lirare", to which is added the information that some people hoe the soil after the seeds have been ploughed in: "occare". In a way, he then returns to ploughing with the technical terms for furrows after *liratio* and the spaces between them: "sulci" and "porcae". The latter word is supplied with an etymology and a parallel from the cult terminology. What we really want, in order to understand the expression "segetes sariri", is an explanation of both words, but the definition of *seges* somehow brings up *arvum* and *novalis*, which in turn lead to the definitions of the ploughing terms. Another characteristic of Varro's comments is that this accumulation of word explanations is not exhaustive. We might have expected a list of all the terms for "ager", e. g. "vervactum", "ager restibilis", and "terra rudis". Only later are the two first terms mentioned, by Stolo in his description of the rotation of the crops (I, 44). Moreover, both *seges* and *arvum* are used elsewhere in our treatise in a much wider sense than that given here [34]; the comment thus gives the word too narrow a sense. Nor is a word necessarily commented on the first time it

34. I, 29, 1: "arvum quod aratum necdum satum est", with which compare I, 19, 1: "Saserna ad jugera CC arvi boum juga duo satis esse scribit"; *ibid.* 2: "et saepe fracta bura relinquunt vomerem in arvo"; I, 7, 2: "ex arvo aequae magno[s] male consito"; I, 13, 3: "boves enim ex arvo aestate reducti . . .". Although one of these places undoubtedly reflects Saserna's language, which cannot bind Varro, the others show that the definition is incorrect. Cf. I, 29, 1: "seges dicitur quod aratum satum est", but I, 69, 1: "tum promendum (sc. far) cum segetes maturae sunt ad accipiendum". Cf. Dahlmann, *RE* Suppl. 6, col. 1197.

appears, as would be expected from a carefully prepared commentary. The word "occare" we meet already in Chap. 29, but not until Chap. 31 do we get an explanation, factual as well as etymological: "occare id est [postea] comminuere ne sit gleba. quod ita occidunt occare dictum." Nor are repetitions avoided. Thus, the word "offringere" is explained in Chap. 29 and again in 31—in remarkably similar terms; indeed, it is explained twice in Chap. 29: "cum iterum (sc.arant), offringere dicunt . . . cum iteratur, offringere vocant." Ursinus would prefer to expurgate the latter sentence in order to improve Varro, like so many other editors; but repetitions occur frequently in the treatise, and as they cannot all be regarded as glosses, we must leave them where they are, as indications of Varro's lack of meticulousness.

The nature of the comments may be briefly divided into three types: (i) technical agricultural remarks, many of which explain why a particular operation should be carried out at a particular time; (ii) explanations or definitions of words; and (iii) etymologies. All three types are combined in Chap. 31 to explain the operation of "vites pampinari". First, the technical remark: "sed a sciente . . ."; then the word explanation or definition: "pampinare est . . . decerpere"; finally, after a brief description of thinning out in the nursery, a number of etymological explanations. It is an extremely precise description of thinning, the best we have in ancient agricultural literature. In the same chapter we learn the etymology of, as well as the actual difference between, two types of mixed crops, "ocinum" and "farrago". As mentioned above, Chap. 29 also has explanations of the meaning of words as well as etymologies, both of which are to be found in Chap. 31, too. Apart from these passages, the different types always occur separately.

(i) Technical agricultural remarks: Chap. 30 contains, among other remarks, the instruction so often met with in Columella: to complete such operations as should have been carried out in the previous period, but for which there was not enough time. The sentence which is added: "antequam gemmas agant ac florescere incipiant", clearly shows that Varro has the planting of cuttings particularly in mind, the same idea being expressed in nearly identical language by Stolo under the "gradus sationis" (I, 40,4). Hence it looks rather like a comment on the work of the previous chapter: "seminaria omne genus ut serantur" (I, 29,1), but only in the second interval does the danger become imminent that planting will be prevented by the leafing. Consequently, the remark belongs in Chap. 30. The explanation "quod dicunt . . ." in Chap. 32 has been mentioned above. In the same chapter it is said in connection with "arationes absolvi", that the warmer the weather, the more valuable the summer ploughing; and also that we ought to "offringere", if a first ploughing has taken place. In Chap. 34 is mentioned an alternative time for planting fruit trees, and in Chap. 35 it is emphasized that no work should be done during the fifteen days before and after the winter solstice. Finally, in Chap. 36, the early "saritio" is determined by the weather. From the above compilation it will appear that the technical remarks in the commentary are few in number and mostly connected with the times at

which the work should be done. This also applies to the remarks on sowing in Chap. 34, which, as has been demonstrated, must in part come from a source other than the main one.

(ii) Word explanations serve to define single words, whether they are connected with actual farming operations or are technical terms, e. g. (I, 29) "seges", "arvum", "novalis", "proscindere", "offringere", "lirare"; (I, 30) "runcare"; (I, 31) "occare"; (I, 32) "pampinare". As a rule, the definition is brief and to the point, but, as mentioned, sometimes too narrow and not necessarily occasioned by the text of the calendar. We might have expected definitions of other operations, e. g. "sarire" and "putare". A number of major operations are later described by Stolo, but these two important operations are only mentioned occasionally in exemplifications ("sarire": 18, 8; "putare": 2, 16; 27, 3). Hence it cannot be denied that the comments here are somewhat accidental.

(iii) Etymology plays a very important part in the commentary. It is a well-known fact that ancient—particularly stoic—linguistic philosophy assumed that words are derived from basic-words—*πρῶται φωναί*—with which the first name-givers named objects and concepts. Then, through derivation from, and development of, these basic-words the contemporary language has been formed, and by studying this derivation it is possible to work back to the basic-words, thus obtaining a truer understanding of the individual word and its meaning [35].

Varro's attitude to etymological science has been fairly often treated during recent years [36]. This is not the place for me to join in the discussion in progress; my purpose here is to point out some peculiarities in Varro's application of etymology in our treatise. The discussion of etymology has its natural place in connection with the *De Lingua Latina*, as the extant books deal with just that very aspect of ancient philology. In our treatise we find Varro using etymology as an ancillary science [37]. According to ancient thinking, etymology affords a linguistic as well as a factual explanation of the semantic contents of a word. When the ridge between two furrows is called "porca", it is because it keeps the grain high (*quod porricit frumentum*, Chap. 29). Further, the tendril of the vine is "capreolus" because it is used for grasping a place (*capere*

35. See esp. Karl Barwick: *Probleme der stoischen Sprachlehre und Rhetorik* (Berlin 1957), pp. 70 sqq.; a work by Jan Pinborg: *Quintilian og den antikke sprogteori* (Copenhagen 1963), cf. esp. pp. 15 sqq.

36. Particularly Varro's treatments of "analogy" and "anomaly" have been severely criticized by D. Fehling, *op. cit.* For an evaluation of this discussion the reader is referred to Jean Collart's article, *Lustrum* vol. 9, (1964), esp. pp. 234 sqq.

37. In my opinion, this difference in the application of etymology should have been pointed out at an earlier date. R. Schröter probably expresses the general opinion when he says: "Ebensowenig will es gelingen, die zahlreichen Etymologien der späteren *Res rusticae* von den jetzt genannten, von *De lingua Latina* oder etwa von den *Logistorici* wesentlich zu unterscheiden" (*Entretiens*, p. 84). Linguistically, this is no doubt correct, but as far as contents are concerned, our treatise affords quite a different opportunity for showing the function of etymology as an ancillary science.

locum), and the branch carrying the grapes is “palma”, syncopated from “parilema”, which in turn is easily derivable from “parere”. In itself etymology is the explanation of words or the giving of a definition, for which it can act as a substitute. So it is no wonder that etymologies abound just in the commentary. In the eight chapters of the calendar there are almost as many etymologies as in the rest of Book I.

A few of the etymologies are known from the *De Lingua Latina*, e. g. “ocinum” being a Greek loan word (I, 31,4 cf. L. L. V, 103), and “leguma” being derived from “lego” (I, 32, cf. L. L. VI, 66). In fact, we have even been informed of this etymology already, in I, 23,2. It is as if, for Varro, some words actually demand to be accompanied by a good etymology, or at any rate an allusion to etymology, cf. I, 2,18: “caprae omnia carpando corrumpunt”, with which can be compared L. L. V, 97: “capra carpa, a quo scriptum “omnicarpae caprae””, and R. R. II, 3,7: “a carpando caprae nominatae”.

More noteworthy are examples of etymologies that differ in the two extant works, cf. the instance already mentioned (Chap. 29, 3): “porca dicitur quod frumentum porricit”, and L. L. V, 39: “ab eo quod aratri vomer sustulit, sulcus, quo ea terra jacta, id est projecta, porca.” Both etymologies have their origin in exactly the same phenomenon, but it is somehow viewed differently in the two works. Such differently viewed phenomena are even more in evidence in the explanations of the word “palma”. In Chap. 31,3 it is explained as a development of “parilema” from the verb “pario”: “bring forth”. The etymology is due to the use of “palma” in the sense of the grape-bearing shoot of the vine. In L. L. V, 63, it is the plant “palma”: “quod ex utraque parte natura vincita habet paria folia.” Evidently, it is the current meaning of the word that decides the etymology. If Varro had made the meaning “palm of the hand” his starting point, we might have had yet a third derivation (cf. Isidor XVII, 7,1: “palma dicta quia manus victricis ornatus est, vel quod oppansis est ramis in modum palmae hominis.”)

Varro is fully aware of the fact that a word may have several possible etymologies. That is part of the difficult science of etymology. The habit of mentioning two possible etymologies of the same word—a familiar feature in the *De Lingua Latina*—is also found, now and again, in the commentary on the calendar; e. g. I, 31: “<farrago> aut quo<d> ferro caesa, ferrago, dicta, aut inde, quod primum in farracia segete seri coepta.” However, what makes the above examples of several etymologies of the same word so striking is the remarkable degree to which the context—or even the whole train of thought—is decisive for the etymology. Perhaps the clearest example of this is in Chap. 31, where the word “poma” is explained: “a quo, quod indige<n>t potu.” This etymology is only conceivable as a comment on the basis of the lemma: “in poma, quae insita erunt, siccitatibus aquam addi cotidie <vesperi>,” but it is not a conceivable comment on Chap. 34,2: “serere poma”. As an explanation of words, etymology is illustrative, especially in a work like our treatise, but as a

scientific method to explain unfamiliar words or institutions, the origin of which is unknown, its value is, to put it mildly, dubious—particularly when applied by a writer of such fertile linguistic imagination as Varro [38].

Summing up, we can now say that as far as the construction of the commentary goes, it is, to our mind, unsystematic and haphazard, particularly where word explanation and etymology are concerned. Some words are explained several times, others not at all. In some instances an etymology known from the *De Lingua Latina* is added, in others the context gives rise to a new etymology. Finally, the words commented on seem to be picked quite arbitrarily. As mentioned above, the *De Lingua Latina* (V, 39) has etymological explanations of “sulcus” as well as “porca”, whereas Chap. 29 only explains “porca”, and with a slightly different etymology at that. It is as if the commentary gets out of hand in several places—particularly Chapters 29 and 31. This causes several words to be included that are but remotely connected with the annotated text, and which are provided with an explanation that does not even always cover Varro’s own usage. If the ideal commentary is one that informs briefly and precisely on phenomena that must be considered unknown to the reader, this is no ideal commentary. It bears too many marks of fortuity.

An examination of Varro’s application of the philological method outside the commentary shows clearly that only word explanation and etymology are immediately recognizable. For example, Varro’s own comments on quotations are almost impossible to delimit unless we have his source, and a discussion of this aspect has its proper place in the next chapter.

The word explanations clearly show Varro’s interest in linguistic antiquarian features. This has already been apparent in a comment on what seems to be a specific Catonian expression (cf. p. 18). Proper word explanation and etymology we find, for example, in Chap. 50 in connection with the word “messis”. In other instances the opposite is the case; obsolete words are brought to mind, e. g. the information that the fastening for the vines was called “cestum” by the ancients (I, 8,6), the mention of the type of farmhand “quos obaerarios majores nostri vocitarunt” (I, 17,2 cf. pp. 33 sq.), or of the variety of apple “quae antea mustea vocabant, nunc melimela appellant” (I, 59,1). As this last example occurs in a paraphrase of Cato, it may be taken as regular commentary. On one occasion the old-fashioned expression is preferred to the modern one (I, 2,1: “ab aeditumo, ut dicere didicimus a patribus nostris, ut corrigimur a recentibus urbanis, ab aedituo”). The adherence to that word seems to have been a favourite idea of Varro’s, as we find it in the *De Lingua Latina* (VII, 12), as well as in a fragment from the *De Sermone Latino* in Gellius (XII, 10); Varro himself

38. Especially the fragments of Varro’s Menippean Satires give a vivid impression of the writer’s almost unbridled linguistic imagination. For our treatise it is enough to draw attention to the names he gives the participants—or rather the already existing persons he makes appear in the dialogue of the three books; cf. Dahlmann, *RE Suppl.* 6, coll. 1187 sqq.

also uses the old form consistently. Elsewhere, technical terms are merely introduced vaguely with a "vocant", "vocatur", "appellant", etc. They are evidently rustic words, which cannot be considered generally known; e. g. "nubilarium" (I, 13,5), "plostellum Poenicum" (I, 52), "sirus" (I, 57,2, it is again explained in Chap. 63). Finally it is also stated that the same thing may have two names (I, 40,4: "quas alii clavolas, alii taleas appellant ac faciunt circiter pedales"), or we find a special term connected with a geographical exemplification, as mentioned on p. 39.

Etymologies also occur here and there in Book I, though much more sporadically than in the commentary. It is a characteristic feature of Varro's work, however, that most of the etymologies are concentrated in a few chapters, in which he gives free play to his passion for them. Among the isolated etymologies there is a remarkable Grecism: the plant "heliotropium", which is introduced only as an example of the *lusus naturae* (I, 46, cf. p. 40); "sicilire a sectione" (I, 49,2); "lora quod lota acina" (I, 54,3). A series of etymologies is found in Chap. 2,14, where we are told that in the old days the words *via* and *villa* were "veha" and "vella", derived from "veho". The same etymology is found in the *De Lingua Latina* (V, 35). An allusion to an etymological chain of this type is found, for example, in Chap. 23,5: "alio loco <virgulta> serenda, ut habeas vimina, unde viendo quid facias"; see also *De Sermone Latino* (p. 220,28 Goetz): "viere enim conectere est, unde vimen dictum virgulti species . . ."

A strange accumulation of etymologies and word explanation is to be found in Stolo's discourse on "nutricatio" (I, 48). Here the meanings and etymologies of the words "granum", "gluma", "arista", "vagina", and "spica" are explained, and along with these are mentioned the terms "urru" and "frit", for which not even Varro ventures an etymology. As pointed out earlier (p. 24), this enumeration of the names for the separate parts of the corn is rather unwarranted in this particular place. Only "spica" is found in the *De Lingua Latina*, and with the same etymology (V, 37: "a spe"). Our passage looks rather like a linguistic comment on the text, but has a counterpart in the enumeration in the commentary of the separate parts of the vine (I, 31). In one of his etymologies Stolo makes a comparison with the vine, but this need not mean that a reference is intended to Chap. 31, which is part of Scrofa's discourse. More likely, the paragraph on corn names is to be taken as a demonstration of general erudition, which is also indicated by the reference to Ennius' translation of Euhemerus. In other words, the passage is, in a strict sense, irrelevant to the subject.

Chap. 50 also contains a number of etymologies, but more closely connected with the text. One of them even Varro seems to consider somewhat rash. As mentioned on p. 24, the cutting of the corn, "messis", is divided into three types, depending on whether one cuts off the ear alone, the whole stem or half the stem: "a quo medio messem dictam puto". The word "puto" reveals doubt, as does Varro's language in one of the previously mentioned etymologies in the commentary (I, 31): "poma a quo, quod indige(n)t potu, dicta esse

p o s s u n t". True enough, both etymological explanations certainly appear extremely far-fetched—even to a kindly disposed modern mind [39].

While etymology and word explanation are integral parts of the ancient commentary, outside a commentary they give the effect of not belonging, but they stamp the work with a master's touch, and give a strong impression of the octogenarian writer's vivid linguistic-antiquarian interest. To an even greater degree than the examples from the treatise of the two Sasernae mentioned in Chap. 2,22 sqq. they are irrelevant to agriculture, but are indubitably so deeply rooted in Varro's method of working as to be unavoidable. Etymology was one of the fashions of the period, and even Cicero, who looked down his nose at the Stoics' preoccupation with the method, uses etymologies quite frequently himself [40].

39. A similar very bold etymology is found in III, 7, 1, where he speaks about two kinds of pigeons: "unum agreste, ut alii dicunt, saxatile, quod habetur in turribus ac columinibus villae, a quo appellatae columbae ...". One gets the impression that Varro here chooses the unusual "columina villae" in order to bring in this etymology, which—to my knowledge—is not transmitted elsewhere. In the *De Lingua Latina* (V, 75) the word is considered an onomatopoeia.
40. Cf. *De Natura Deorum* 3, 62 sq. and the circumspection with which Cicero introduces the etymology of "fides" in *De Officiis* 1, 23. For the many etymologies in the *De Re Publica* cf. P. Krarup, *Rector rei publicae*, 1956, p. 166.

VARRO AND THE TECHNICAL LITERATURE

The source problem is the only problem connected with Varro's agricultural treatise that has been able to give rise to serious discussion among scholars in recent years. From Heinze's article in 1888 [1] to Waehler's dissertation in 1912 [2] the question of Varro and his sources has been thoroughly discussed in a number of treatises, and thanks to the shrewd observation and great industry of the philologists of the period, it is hardly possible to find other relevant parallels in the surviving literature. It might, however, be appropriate to discuss the conclusions drawn from the material presented, and the basis for including the "problem of sources" in a study like the present one.

In matters of historical facts, e. g. "N. N. was born in such and such a year", it is obvious that it is of the greatest importance to decide whether source A is directly dependent on source B. If so, our number of sources may be reduced to one, and the only question is to evaluate the reliability of B's information. But in the matter of technical information about agriculture, e. g. how to buy a slave, things become more complicated. As will be remembered, Varro's instructions for this very matter are a quotation from, or a paraphrase of, Cassius [3], but this *does not* reduce our knowledge of the questions to be considered when buying a slave to Cassius. For this is a case where the instructions could be tested directly, and unless it can be proved that Varro had no special knowledge of slave purchases, it must be assumed that he copies his predecessor because he thinks his description adequate and exhaustive [4]. Here we must realize that in Antiquity it was the normal procedure to copy one's predecessors in work of science or popular science. There was no copyright protection of the published word, and consequently no possibility of prosecuting a plagiarist

1. Animadversiones in Varronis rerum rusticarum libris, in *Commentationes Ribbeckianae* (Leipzig 1888), pp. 431 sqq.
2. *De Varronis rerum rusticarum fontibus quaestiones selectae*.
3. I, 17, 3; cf. p. 16.
4. Of course, the information of a historical date of the above kind may have been verified by other sources, even though writer A takes over B's wording verbatim. As for Varro, we know that e. g. in the *De Poetis* he discussed various traditions about such dates, and that in a number of cases he arrived at results other than those of his predecessors. It could be supposed that where he agreed with these, he has not always substantiated the view, only stated it. If so, we have also a verified use of sources for the transmission of the simple historical date. Cf. Dahlmann: *Studien zu Varro "De Poetis"*, esp. pp. 53 sqq.

for piracy. In his classic monograph, "Beiträge zur Quellenkritik der Naturgeschichte des Plinius", Münzer has expressed this fact lucidly: "Jedes Buch über einen Gegenstand macht die früheren, die ihn behandelten, bis zu einem gewissen Grade überflüssig und entbehrlich, indem er das, was sein Verfasser als wertvoll erkannte, aus ihnen übernimmt." [5] Münzer proceeds to demonstrate, by many excellent examples, how Pliny exploits earlier literature, committing to our way of thinking a number of offences amounting to professional dishonesty. Varro's use of sources in the agricultural calendar strongly suggests that he has handled his sources in a similar way. With regard to his use of earlier literature, he sometimes refers to his source, sometimes not; sometimes he quotes verbatim, sometimes he uses a paraphrase; in many cases it is just a single term that recurs, as if by way of an allusion to, or reminiscence of, the predecessor's work. As so much of the technical literature in question has not survived, it is obviously very difficult to determine how much of Varro's treatise is genuinely his own doing, and it must be established from the start that the whole of his treatise could have been culled from his predecessors, without this necessarily having an adverse effect on his contemporary reputation as a scholar. If Varro has copied his predecessors mechanically and then pieced together his treatise, adding errors of his own that confound the issue, this treatise must, of course, be considered a poor source for the study of ancient farming, and the procedure would also have diminished the value of the treatise to the contemporary reader. However, unless he has actually worked thus mechanically, the fact that large parts have been taken over from predecessors, does not diminish the value of the treatise in a modern, historical examination, just as it would not have bothered a contemporary public.

Varro's own words about his principles in this matter are clear and unambiguous. He draws on three sources: his own experience, reading, and what he has heard experts say [6]. Unless this evidence is to be set aside entirely—and that would put an end to any discussion—it must be a foregone conclusion that at least part of the content stems from Varro himself, and not only certain extraneous material, as maintained by many scholars, but also proper technical information, as appears from the clause: "quae ipse in meis fundis colendo animadverti". To sift out all the genuine Varroniana is not possible, however, as not all his predecessors are available. What, for example, is the relationship between Scrofa's discourse and his own agricultural treatise which is now lost, and of which we possess but a few quotations in Columella and Pliny [7]? He is probably Varro's immediate predecessor, but is not mentioned as an agricultural writer. The reason can hardly be that Varro has been reluctant to draw people's attention to this work because he himself has copied it extensively [8]. In action for piracy was

5. *Op. cit.* p. 6.

6. I, 1, 11: "ea erunt ex radicibus trinis, et quae ipse in meis fundis colendo animadverti, et quae legi, et quae a peritis audii."

7. Cf. Chap. I note 5, and p. 37.

8. E. g. O. Hempel: *De Varronis rerum rusticarum auctoribus quaestiones selectae* (Diss.

out of the question in Antiquity. The idea has also been advanced that Scrofa's work fell chronologically between the dramatic date of the dialogue and its writing, so that Scrofa at the supposed time of the dialogue had not yet become an agricultural writer [9]. However, we have found other anachronisms in Book I, so this will not explain either, with any degree of certainty, why Varro does not somehow mention Scrofa's work. Considering that Scrofa was a close friend of Varro's and a prominent member of Roman society, it is in fact inexplicable that Varro does not pay him the compliment of mentioning his work [10].

Only where Varro states his source himself, or where it has survived directly or indirectly, can we definitely say that Varro does not draw on his own experience; but much more than this may be—and probably is—taken over from predecessors. We must also take into consideration the possibility that Varro does not make direct use of the writer quoted, but has only second-hand knowledge of him. As we know, verifying quotations in the ancient roll involved considerable difficulties even when one had the work in question in one's library. Indeed, we must be prepared to accept that the ancient scholar availed himself of technical literature in a way which was totally different from the modern, almost pedantic methods.

In the light of the above, it will be realized that the "source problem" looks a very difficult proposition indeed. Only when we happen to possess a source can we begin to discuss whether it has been used directly or indirectly, and we must realize, before we set out, the wide margin of error present in any final evaluation. The same wording can be found in many writers, and the problem of discovering the "source" in each case may well be formidable. With this as the starting point, a brief survey of the most important modern contributions to the discussion of the sources of Varro's Book I will be useful.

The early editors and commentators were already aware of the source problem, and here and there, e. g. in the commentaries of Schneider and Keil, we find references to the parallels, some of which were used to restore the corrupt text.

The earliest independent treatment, however, we find in Heinze's article [11]. The author examines a number of verbal parallels between Varro and the *Geoponica*, and proves that Gemoll was not right in maintaining that Varro was

Leipzig 1908) p. 20, in which it is maintained that an accusation of piracy is anticipated by letting Scrofa deliver the discourse. This principle, if applied to Cicero's philosophical writings, gives rise to some not unamusing observations!

9. E. g. Heinze, *op. cit.* p. 433.

10. Varro does not mention any Latin authors at all in his bibliography (I, 1, 8 sqq.) nor is there mention of the fact that Mago's great work was translated into Latin (cf. Pliny Nat. Hist. XVIII, 22). The works of Cato and the two Sasernae are only mentioned at the beginning of the dialogue (Cato in I, 2, 28, the Sasernae in I, 2, 22). Scrofa's work might have been mentioned either when he is introduced in Book I (2, 10) or in Book II, where he is present from the very beginning. There is nothing to prevent Scrofa himself from alluding to it, cf. Cato in Cicero, *Cato Major*, par. 54: "quid de utilitate loquar stercorandi? Dixi in eo libro, quem de rebus rusticis scripsi".

11. Cf. note 1.

used extensively and directly by the authors of *Geoponica* [12]. There are often similar parallels between Varro and Columella, who in several instances mentions Mago as his source. Heinze interprets this to mean one common source for Varro, Columella, and the *Geoponica*, viz. Mago himself or his excerptors, Cassius Dionysius and Diophanes of Bithynia. Not even when the *Geoponica* mentions Varro as source does this seem to be the case. As far as Varro is concerned, the conclusion must be that he has repeated his sources almost word for word in the passages in question [13].

Heinze's examination revealed most of the parallels between Varro and the *Geoponica* to be in Books II and III of the *De Re Rustica*, and by far the most obvious agreements between these writers and Columella—and other agricultural writers—are to be found within a fairly narrow subject, viz. the description of the external appearance of livestock. In the light of the general observations made at the beginning of this chapter, this is not surprising. Already in the earliest agricultural literature—Mago and his excerptors—a series of demands for the appearance of livestock was fixed, and these demands were found so precise by later writers that they adopted them almost verbatim, either wholly or sometimes only in parts, as the length of the description may vary. These descriptions of the appearance play a very important part also in the reasoning of the following works, but on the whole I shall leave them out of account, since the truth of the matter seems quite clear to me. Just because the subject is limited, these parallels tell us very little about their interdependence, when we know how the ancient scholar worked. Apart from that, there are many separate points connected with cattle breeding, as well as the *villatica pastio*, which indicate that Varro is now dependent on Mago and his excerptors, now differs from them. As previously mentioned, Heinze's examination mainly concerned Books II and III. In Book I there are few cases in which it is possible to establish any direct connection between Varro and the excerptors of Mago, and in these cases Varro mentions the writers he is quoting. Thus, Heinze's article does not contain much to throw light on the sources used in Book I, but it outlines very lucidly indeed Varro's use elsewhere of the excerptors of Mago.

Gentili went considerably further in his treatise, "*De Varronis in libris rerum rusticarum auctoribus*." [14] With great diligence he has gone through the relevant literature, and juxtaposes Varro's text with the sources where they are traceable, both in the cases where Varro states his source, and where he omits it. Moreover, he takes into account the extant literature, as well as that surviving in quotations and excerpts only. Finally, he puts together a number of parallels occurring within Varro's own writings, showing the extent to which Varro repeats what he has said earlier. His conclusion is that Varro has used a variety of sources, in many cases reproduced almost verbatim, in other cases altered,

12. Untersuchungen über die Quellen, den Verfasser und die Abfassungszeit der *Geoponica* (Berlin 1884).

13. Op. cit. p. 440: "ad fontes suos rebus verbisque presse se applicasse".

14. Studi Italiani di Filologia Classica, vol. XI, 1903, pp. 99 sqq.

sometimes misunderstood. This examination also proves that Varro did not always look for the item he wanted in the original writer, but may have had it from intermediary sources. In Gentili's opinion this does not, however, exclude the possibility that Varro may also have used the fundamental scientific works, above all Aristotle and Theophrastus. The interdependence between Varro, Columella and the *Geoponica* discussed by Heinze he interprets as a successive handing down of material from Mago and his excerptors, via Varro and Columella, to the *Geoponica*. He mostly regards only linguistic, antiquarian and legal observations as original matter, and generally pronounces a very severe judgement on the whole of Varro's treatise, notably Book I, which, compared with Cato's and Columella's works in the same subject, he finds extremely meagre.

A very critical attitude to this interpretation of the source problem is presented by Oscar Hempel in his book "*De Varronis rerum rusticarum auctoribus quaestiones selectae*." [15] In numerous instances he can prove that Gentili often parallels two places which have little or no affinity with each other, neither in form nor contents. A slight resemblance in phraseology or subject matter makes him pronounce the earlier writer Varro's source, and his entire article is thereby reduced to a useful compilation of material, which must, however, be used cautiously. Hempel himself takes as his starting point the relations between Varro and Cato, where a very conspicuous feature is the fact that Varro has taken over long passages almost verbatim, in some instances in a slightly abbreviated form. After a brief description of the relations between Varro and the Roman writers now lost, of whom but very scanty fragments have survived, he compares him with Aristotle and Theophrastus. The comparison is divided into three types: the places where Varro imparts opinions that conflict with those of these writers; in other words, where they cannot be his authorities; the passages that show some likeness; and, finally, examples of almost complete correspondence in contents, as well as in phraseology. The comparison between Varro and Aristotle does not, however, afford sufficient grounds for the author to draw definite conclusions about the possibilities of direct or indirect use, as it is for the most part a matter of quite brief or isolated phenomena. This problem is also of minor importance to the present Studies, as Aristotle's zoological writings must, for the most part, have been used in Books II and III. The relationship between Varro and Theophrastus, however, is very much in evidence in Book I, and as Hempel's conclusions are mostly based on that, it will be reasonable to concentrate on this point.

Not a few passages in Varro are almost direct translations of Theophrastus, but frequently in a different context from his, so that it can be asserted, on the basis of Theophrastus, that if Varro has used his works directly, he has done so extremely negligently and has often actually misunderstood the context. Gentili had already drawn attention to that. Apart from considering the latter's material, Hempel also examines that part of Stolo's discourse concerned with

the “gradus serendi” (I, 40 sqq.). The close relationship between this passage and Theophrastus had already been realised by Schneider. Although there are clearly great similarities between the two writers, Theophrastus’ sentences have been used by Varro in such a way as to prompt Hempel to maintain that he has not made direct use of him, but knows him e. g. from Diophanes. It does indeed seem to be a weighty argument that if Varro has had first-hand knowledge of Theophrastus, he has quoted him almost verbatim, but in the wrong context. This careful quoting but careless reproduction of the thought is a difficulty which is removed if Theophrastus’ learning is supposed to have been handed on by an intermediary source, which has used the material in a different way. As a matter of fact, this proof is insufficient. If Hempel is right in maintaining that Varro/Stolo describes the “gradus serendi” with many errors of fact, Varro must, at any rate, have committed a number of serious mistakes when writing his treatise, whether he used Theophrastus himself or a good, intermediary source which quoted Theophrastus verbatim and put his learning in the proper context. Hempel imagines the tradition to be this: Cassius compressed Mago’s 28 books into 20 and incorporated learning from Theophrastus; these 20 books were again compressed by Diophanes into 6, and at this reduction some of Theophrastus’ phrases were taken over verbatim, but in a way which invited a series of confusing mistakes when Varro, in his turn, used them for the composition of his treatise. I believe that such a process should be accepted with the greatest reluctance, considering that we have neither Mago, Cassius, nor Diophanes, but only Theophrastus and Varro. The fact that Cassius was a main authority for Varro is, of course, supported by Hempel by reference to Heinze’s theory of Cassius as the common source for Varro, Columella and the *Geoponica*. As a second main authority he mentions Tremelius Scrofa, but his arguments on this point are not convincing [16].

In short, the result of the above examination is that Varro is no original agricultural writer, and there is no denying that the tone of the discussion is often keenly polemical against Varro’s methods, which are sometimes denounced as simply dishonest. Although Hempel refers to the work by Münzer mentioned above, he does not appear to have adopted this author’s fundamental views on ancient working methods. Varro’s attitude to the literary sources is considered from a modern viewpoint, and, particularly in the case of the relationship with Theophrastus, Hempel continually uses him as the key to understand Varro. When the links in the chain of argument have been changed about, Varro is the one who is mistaken. The entire discussion is thus conducted on the wrong level, which is also to be seen in the dissertation by Waehler, “*De Varronis rerum rusticarum fontibus quaestiones selectae*” [17], where Columella is also included in the discussion. It is stated that Columella knows Varro at second-hand, as well as directly, and that Varro has himself made direct use of a series of

16. Cf. note 8.

17. Jena 1912.

writers—in other words, a return to Gentili's views. The total effect is that of a defence of Varro's methods. Dahlmann rightly calls this work "wenig förderlich" [18]. Waehler naturally maintains that Varro uses Theophrastus directly, but in order to do so, it is necessary to re-analyse and discuss Hempel's material painstakingly. Waehler does not go beyond noting down the parallels; he does not discuss the nature of the connection between them, and has therefore not refuted Hempel's ingenious theory. Dahlmann supports Hempel and has made no attempt at a revaluation of the material—which was not to be expected in a work of that description. Such being the state of research at the moment, it will be necessary to consider Varro's relationship to Theophrastus once more and try, not to read Varro using Theophrastus as the key, but to understand Varro himself and then see how he may have used his Theophrastus.

How Theophrastus should be used as an agricultural writer is unambiguously established in the dialogue. During the introductory discussion on agriculture as such, the subject of the "partes agri culturae" naturally turns up, and Agrius says that whenever he reads Theophrastus' botany, it seems to him that the "parts" of agriculture must be infinitely many. To this Stolo replies that these books on botany are more suited to those who attend the schools of philosophy than to those who till the soil, although, of course, botany has many useful aspects which it shares with the science of agriculture (I, 5). The scholars whose opinion is that Theophrastus is used only indirectly must, of course, maintain that this passage is nothing but boasting on the part of Varro, as he had not read the works in question [19]. Instead it would undoubtedly be more fruitful to use it as a key to understanding the relations between Varro and Theophrastus: botany is one discipline, agriculture another; but agriculture can use botany as a sort of ancillary science. This clearly shows that the same principle cannot be taken as the basis for Varro's use of Cato and of Theophrastus. In fact this is far from the case.

Apart from the above-mentioned place, Theophrastus is mentioned six times in Varro's Book I, one of these being in the bibliography. Only in one case (I, 40,3) is the subject of a technical nature, the other cases are—as was to be expected—botanical examples in support of the explanation. We shall briefly examine these cases.

Example (I) In Chap. 7,5–8 we get a number of examples of the same plants behaving differently according to the place in which they grow (cf. p. 40 sq.). Twice there are express references to Theophrastus with the words: "ut Theophrastus ait", and "ut scribit Theophrastus". We first get examples of normally deciduous trees which, in some localities, do not shed their leaves in winter. The main source is Theophrastus' Hist. Plant. I, 9,5, but the order in which Varro takes them is not identical with that of his source.

18. RE Suppl. 6, col. 1201.

19. According to Hempel, even this assessment of Theophrastus is derived from Cassius, cf. op. cit. p. 63.

Theophrastus

1. ἐνια δ' οὐκ ὄντα τῇ φύσει παρὰ τὸν τόπον ἐστὶν αἰφύλλα, καθάπερ ἐλέχθη περὶ τῶν ἐν Ἐλεφαντίνῃ καὶ Μέμφει
2. ἐν Κρήτῃ δὲ λέγεται πλάτανόν τινα εἶναι ἐν τῇ Γορτυναίᾳ πρὸς πηγῇ τινὶ ἣ οὐ φυλλοβολεῖ
3. ἐν δὲ Συβάρει δρυς ἐστὶν εὐσύνοπτος ἐκ τῆς πόλεως ἣ οὐ φυλλοβολεῖ.
4. λέγεται δὲ καὶ ἐν Κύπρῳ πλάτανος εἶναι τοιαύτη.

Varro

1. Cretae ad Cortyniam dicitur platanus esse, quae folia hieme non amittat,
2. itemque in Cypro una,
3. item Subari, qui nunc Thurii dicuntur, quercus simili esse natura, quae est in oppidi conspectu,
4. item contra atque apud nos fieri ad Elephantinen, ut neque ficus neque vites amittant folia.

The reason why the order has been changed seems clear enough. It is simply that the two examples of planes have been put together (Theophrastus 2 + 4), then comes the oak at Sybaris, and it is rightly said that the town is now called Thurii. Hence, Theophrastus' source must be of an earlier origin [20]. Εὐσύνοπτος ἐκ τῆς πόλεως is correctly reproduced as "quae est in oppidi conspectu". On the other hand, Theophrastus' first example refers to an earlier passage (Hist. Plant. I, 3,5) in which both fig and vine are mentioned, but as a locality only Elephantine is mentioned, as in Varro. Thus, whoever used Theophrastus took the trouble to check the place he refers to.

If Hempel is right in his supposition that Varro has not himself consulted Theophrastus, but is acquainted with the passage only through Diophanes, the arrangement of the material must, of course, be due to the latter, or perhaps rather to his source, Cassius Dionysius. However, it seems to me a somewhat rash assumption that other agricultural writers should be so interested in such specific examples of botanical anomalies that they should have been handed down verbatim through several links to Varro. Exemplification is a stylistic feature typical of Varro which we cannot, just like that, attribute to a (now lost!) predecessor, especially in a context like the present where the examples bear the stamp of a learned digression. After these examples Varro proceeds with another oddity, viz. trees which bear two crops a year. Two examples are mentioned: the vine near Smyrna, and the apple in the Ager Consentinus. These observations are, not to be found in Theophrastus, and Pliny, who quotes the passage [21],

20. As we know, Sybaris was destroyed in 510 by Croton, whereas Thurii was not founded till 443.
21. Nat. Hist. XVI, 115. The whole of this passage in Varro has been used by Pliny in various places in his Natural History, and the reference to Theophrastus seems to have induced him to refer back to the original source; cf. Münzer, op. cit. pp. 19 sqq.

attributes them to Varro, which does not necessarily mean, however, that they were in fact introduced into the technical literature by him. However, it is not very probable that the apple in Ager Consentinus has been known to the Greek writers, and for that reason Varro is the most likely originator of the example. Again, the following sentence: "idem ostendit, quod in locis feris plura ferunt, in iis quae sunt culta meliora" has the ring of Theophrastus (Hist. Plant. I, 4,1): πλείω μὲν γὰρ δοκεῖ τὰ ἄγρια φέρειν, ὥσπερ ἄχρας, κότινος, καλλίω δὲ τὰ ἥμερα but Varro does not mention the examples of this statement quoted by his source. He continues with examples of plants which prefer strange habitats: some grow in lakes, "ut <h>arundines in Reatino", others in rivers "ut in Epiro arbores alni"; others still in the sea "ut scribit Theophrastus palmas et squillas". This whole passage is a paraphrase of Theophrastus from the same place (Hist. Plant. I, 4,2 sq.), but Theophrastus does not furnish any geographical examples. Beyond doubt, the reeds are Varro's own, Reate being his home town, from which he frequently takes examples. We know that Varro was familiar with Epirus [22], and he has therefore chosen the alder from the range of trees which Theophrastus calls ἀμφίβια, because he has seen it there. The last example, however, he has not provided with a locality. With regard to just this very example Hempel lays great emphasis on the fact that Theophrastus says the plants in question occasionally (ποτέ) grow in the sea, whereas Varro in his reproduction has omitted that word. Hempel says: "tamen autem elucet, quam leviter omnique iudicio misso Varro fontes exscripserit. A Cassio enim Dionysio ποτέ esse omissum non credo quod is . . . Theophrastum diligentissime expressit. Fortasse autem Diophanem τὰ δὲ καὶ . . . ποτέ deleverat, ita ut Varro facillime in hunc errorem incidere potuerit" [23]. Varro has, however, given it enough thought to add the geographical localities as examples. Presumably, he did not think that all palms grow in the sea, nor is this the meaning conveyed by the text unless one wants to misunderstand it. The most obvious explanation of the problem—that is, if it is a problem at all—is that Varro, having left out a number of the plants in Theophrastus' list, leaves out ποτέ as well. In my opinion, the detour from Theophrastus to Varro via two literary intermedia is not very probable when it may be taken for granted that some of the localities are Varro's own contributions. The only reasonable explanation is that Varro knows his Theophrastus, and knows him well, so that he has abbreviated his lists of plants and supplemented them with precise observations from places he knows himself.

Example (II) In Chap. 37,5 Varro mentions the various types of preparation of the soil before planting. The reasons he advances for this are that some plants

22. Storr-Best makes Epirus the setting of Book II; cf. op. cit. pp. 355 sqq. See also Servius ad Verg. Aen. III,349: "Varro Epiri se fuisse dicit et omnia loca . . . se vidisse". For other geographical exemplifications from Epirus, see Della Corte, op. cit. p. 73.

23. Op. cit. p. 47.

spread their roots less, e. g. the cypress, others e. g. the plane, more; he adds that Theophrastus mentions a quite young plane tree in the Lyceum with a very large spread of roots. Theophrastus mentions this plane tree in *Hist. Plant.* I, 7,1, but in a slightly different connection. Plants, he says, need both water and room to spread their roots. This plane had both, growing near a water conduit—which probably had a leak. So, by omitting Theophrastus' context, Varro has slightly altered the example in order to adapt it to his own end.

Example (III) In Chap. 40,1 Varro gives the previously mentioned definitional analysis (p. 33) of semen. One group of semina is invisible: "latet (sc. semen) si sunt semina in aere, ut ait physicos Anaxagoras, et si aqua, quae influit in agrum, inferre solet, ut scribit Theophrastus." "Semen, quod latet", which is Theophrastus' category γένεσις αὐτόματος, is described in some detail twice: *Hist. Plant* III, 1,4–5 and *C. P.* I, 5,2. In the former case reference is made to a number of opinions held by various philosophers, Anaxagoras, Diogenes, and Cleidemus. Theophrastus does not disclose his own opinion, but goes on: "ἄλλαι δὲ . . . ἐμφανεῖς". So here it is no longer a matter of γένεσις αὐτόματος, but ἐμφανής, and consequently it will not be reasonable to connect our passage in Varro directly with it. The relationship seems far closer with *C. P.* I,5,2. Mention is first made of self-reproduction by rain, then it goes on: εἰ δὲ δὴ καὶ ὁ ἀῆρ σπέρματα δίδωσι συγκαταφέρων ὥσπερ φησὶν Ἀναξαγόρας καὶ πολλῶ μᾶλλον (viz. γένεσιν ποιεῖται): ἄλλας γὰρ ἂν ποιοῖεν ἀρχὰς καὶ τροφάς· ἔτι δ' οἱ ποταμοὶ καὶ αἱ συρροαὶ καὶ ἐκρήγματα τῶν ὑδάτων πολλαχόθεν ἐπάγουσι σπέρματα καὶ δένδρων καὶ ὕλη-μάτων, δι' ὃ . . .

Here I attach importance to the fact that Varro first refers to Anaxagoras, and this writer alone, and I understand the phrase ἔτι δ' οἱ ποταμοὶ to be an expression of Theophrastus' own opinion, and both types of seed dispersal to be αὐτόματοι. Both Gentili [24] and Hempel [25] seem to assume that the main source is *Hist. Plant.*, whereas Wachler is more precise [26]. In this case also it does not appear likely to me that the information is handed down indirectly. We have no possibility of knowing whether the excerptors of Mago contained a similar observation on the reproduction of plants. A treatise on practical farming is not really the place for it, and Varro's definitional analysis of the well-known "semen" seems to be entirely his own. This kind of theorizing is a particular interest of Varro's, and he is followed in this by Vergil [27] and Pliny [28], but not by Columella. Moreover, it would be a strange coincidence if the reference to Anaxagoras, as well as the one to Theophrastus, had been handed down

24. *Op. cit.* p. 117.

25. *Op. cit.* pp. 48 sq.

26. *Op. cit.* p. 73, note 2.

27. *Georgics* II, 9 sqq. gives a poetical elaboration of Theophrastus' classification, see W. Mitsdörffer, *Vergils Georgica und Theophrast*, *Philologus*, vol. 93 (1938–39), pp. 449 sqq.

28. *Nat. Hist.* XVII, 58.

through several writers, when we know that Diophanes reduced Dionysius from 20 books to 6.

This simple examination of the exemplifications where Varro mentions Theophrastus' name seems to furnish convincing proof that Varro used Theophrastus at first hand, adapting the latter's information to suit the new context. Sometimes there is a reduction of the material, sometimes an extension. However, we do also find exemplifications that must emanate from Theophrastus, though his name is not mentioned.

Example (IV) As mentioned on p. 22, Chap. 44, 2 discusses first the amount of seed to be sown per unit of area, then the yield, and finally the rotation of crops. Agrius interrupts with the words: "In Olynthia [quotannis] restibilia esse dicunt, sed ita ut tertio quoque anno uberiores ferant fructos". With this we may compare C. P. I, 20,4: 'Εν γοῦν τῇ Ὀλυνθίᾳ φασὶν ὡς ἀεί τι καρποφορεῖ, παραλλαγήν δὲ ποιοῦνται κατὰ τριετίαν. In Theophrastus this sentence alludes to olive trees, but Varro uses it about the *ager* in general, as the "restibilia" obviously show. Moreover, παραλλαγή has been translated "in bonam partem", as was pointed out by Hempel [29]; but nevertheless, he did not dare build anything upon this passage. This seems to me a tame attitude. If Varro—as maintained by Hempel—really does copy a good intermediary source mechanically, we could hardly expect to find such a mistake. But if he quotes from memory, or, better still, from an excerpt containing the sentence in question, it is very easy to understand how an observation on the bearing capacity of olives becomes one on a special type of rotation of crops. In the period between excerpting the passage and writing the treatise Varro has forgotten the context. Special note should be made of the agreement between "φασί" and "dicunt" in the two quotations. If it is a quotation from Theophrastus which is introduced in this way, it proves, as clearly as anything, how circumspect we must be with regard to this kind of information in Varro. φασί/dicunt applies to Theophrastus' authorities on olive growing, not to those of Agrarius/Varro on farming. It should be noted that, unlike a general technical instruction, it is a piece of information which was not immediately verifiable when the passage was being written.

Example (V) In Chap. 46, under the "gradus nutricandi" the work in the nursery is dealt with, as mentioned on p. 23, and examples are given of the "admiranda discrimina naturae": in some plants, e. g. the olive, the silver poplar, and the willow, the leaves turn after the summer solstice so that they follow the ecliptic course of the sun, but the heliotrope follows its daily course across the sky. From this fact Varro derives the name of the flower. These are two different botanical phenomena. Trees that turn their leaves at the solstice are mentioned in two places by Theophrastus:

Hist. Plant. 1, 10, 1

ἴδιον δὲ καὶ τὸ τῇ ἐλάᾳ καὶ τῇ φιλύρᾳ
καὶ τῇ πετέλᾳ καὶ τῇ λεύκῃ συμβαῖ-
νον· στρέφειν γὰρ δοκοῦσιν τὰ ὕπτια
μετὰ τροπᾶς θερινᾶς, καὶ τούτῳ γνω-
ρίζουσιν ὅτι γεγένηται τροπαί.

C. P. 2, 19, 1

ὅσα δὲ κοινὰ γένους τινὸς ἢ καὶ πλει-
όνων μὴ ὁμογενῶν οἷον τὸ στρέφειν
τὰ φύλλα τὴν φίλυραν καὶ τὴν ἐλάαν
καὶ τὴν πετέλεαν ταῖς τροπαῖς ταῖς
θεριναῖς.

As in other examples of similar phenomena, mention is also made of flowers which close up at night. This characteristic of the heliotrope is mentioned in Hist. Plant. VII, 15,1: ὅσα δὲ τὰς ἀνθήσεις λαμβάνουσιν ἀκολουθοῦντα τοῖς ἄστροις, οἷον τὸ ἡλιοτρόπιον

As will appear from the above, none of Theophrastus' lists is identical with Varro's examples. The olive appears in all three cases, the silver poplar in Hist. Plant. and in Varro, the willow only in Varro. We cannot deduce anything from Varro's omissions, as he is giving not a list, but examples, which are often used for the very sake of reduction. As Varro alone mentions the willow, Hempel concludes [30] that it has been mentioned in Varro's source, but which of the two Theophrastus passages that source used he does not venture to decide. The parallel "populus alba" and λεύκη speaks for the Hist. Plant., the transition from trees to flowers for the C. P. In my opinion, it must be a combination of the two passages. Not only the silver poplar, but also the parallel between καὶ τούτῳ γνωρίζουσιν ὅτι γεγένηται τροπαί and "horum enim folia cum converterunt se, solstitium dicitur fuisse" shows a close relationship with Hist. Plant. The transition in C. P. from trees to flowers closing at night seems to indicate a relationship to Varro's heliotrope example. According to Pliny, it is a very characteristic feature of just that flower that it closes at night [31]. Of course, it may be asserted that Hist. Plant. alone is the source. If so, τροπαί may simply have suggested an association with *heliotropion*, affording an opportunity for Varro to indulge in one of his cherished etymologies; but, on the other hand, the transition, tree → flower, is a striking parallel. As to the willow, Varro need not have found it in any source. A willow thicket is part of any vineyard, and Varro, himself the owner of several estates, is, of course, very well acquainted with them. Whether the mention of the heliotrope has any connection with Hist. Plant. VII, 15,1 cannot be settled with certainty, although *secuntur/ἀκολουθοῦντα* might indicate a connection. To me, the most probable explanation is that this is a co-ordination of three different passages, and I see no reason to assume another co-ordinator than Varro. As pointed out earlier (p. 40), this passage too belongs to the category of the learned footnote, typical of Varro himself. Add to this

30. Op. cit. p. 45.

31. Nat. Hist. XXII, 57: "Heliotropi miraculum saepius diximus cum sole se circumagentis etiam nubilo die; tantus sideris amor est; noctu velut desiderio contrahit caeruleum florem". As was to be expected, the "heliotrope" of Antiquity seems to cover several modern varieties, so that we cannot even be sure that Varro and Pliny are speaking about the same plant. Cf. André, op. cit.

that not only the examples mentioned here, but also the immediately preceding exemplifications from Chap. 44,3 (our Example IV) show an obvious relationship with Theophrastus, and it seems very rash with Hempel to postulate an intermediate source. The mistake in Example IV is most easily understood as due to the use of a brief excerpt, where the context in Theophrastus was forgotten. A co-ordination of widely different passages, as in the present Example, is, of course, also most easily achieved if one is using excerpts. An examination of the intermediate parallels with Theophrastus will prove the assumption that excerpts were used to be a very likely one indeed.

In Chap. 44,4 Stolo's "gradus nutricandi" begins; as mentioned on p. 24 it is characterized by its disjointed compositions: the cycle of Nature → the germination periods of corn → instructions for the nursery → the growth of roots → other *mirabilia*. Each of these subjects has a close connection with Theophrastus. First the cycle of Nature: the plant grows, conceives and bears ear, whereupon the corn returns whence it came. To this is added the following remark: "itaque si florem acerbumve pirum aliudve quid decerpseris, in eodem loco eodem anno nihil renascitur, quod praegnationis idem bis habere non potest. Ut enim mulieres habent ad partum dies certos, sic arbores ac fruges". In C. P. I, 14 Theophrastus discusses trees that bear fruit twice a year, and compares them with sheep, which bear lambs twice a year. When the first crop of fruit has been picked, the tree produces a second. The conditions required for this are good soil, care and suitable weather, so that the plant has sufficient time for the "pregnancy" (κύησις). Theophrastus continues (par. 2): διὰ τοῦτο γὰρ οὐδ' ἐάν τις ἀφέλῃ τὸν καρπὸν ἢ ἄνθος, δύναται πάλιν ἕτερα γεννᾶν διὰ τὸ μὴ λαμβάνειν τὸν τῆς κυήσεως χρόνον· οὐ γὰρ οἷόν τε ἄνευ τοῦ κυῆσαι γεννᾶν ἐξανηλωμένου τοῦ προϋπάρχοντος.

Here Hempel fastens especially upon the fact that Theophrastus is talking about trees bearing twice a year, Varro about normal fructification [32]. His very careful explanation of how the passage in Varro is meaningless, is entirely due to the fact that he cannot disengage himself from the context in Theophrastus, and, consequently, does not realize that Varro uses the phrasing of the source to illustrate quite a different fact, viz. that if the cycle is broken, the process stops for that year. Thus, Varro's "itaque", the Latin parallel of διὰ τοῦτο γὰρ, acquires a very precise meaning by introducing an example to prove the cycle theory. Varro's statement in itself is perfectly true, but when it is expressed in terms so similar to Theophrastus', it suggests that Varro has used his excerpt of Theophrastus in a new, but quite sensible context. As Hempel will not realize this, the sentence "quod praegnationis idem bis habere non potest" becomes meaningless. On the other hand, the ensuing comparison between a woman's "ad partum dies certos" and those of trees is not immediately comprehensible.

As mentioned by Hempel [33], the beginning of Chap. 45 seems almost a

32. Op. cit. pp. 41 sqq.

33. Op. cit. p. 43.

translation of Hist. Plant. VIII, 1,5, where, however, one must look in vain for the germination period of millet and sesame. Here Hempel might have postulated an intermediary source, but refrains from doing so. Varro's text reflects Hist. Plant. VIII, 1,1, where a distinction is made between three types (γένη) of cultivated plants: τὰ σιτώδη, τὰ ὀσπρία and κέγχρος, ἔλυμος, σήσαμον, referred to as ἀνώνυμα = Varro's milium, sesamum, as opposed to hordeum, triticum and legumina. Varro may well have added the missing germination periods himself, as they are only given approximately: "similiter aquis fere diebus". If so, we have yet another example of a reasoned application of Theophrastus, who is even improved upon. It cannot be a question of a purely mechanical use of an excerpt.

Chap. 45,2 describes "nutricatio" in the nursery. The plants should be covered in winter, and no water should be left to stand anywhere, as frost may damage the roots. Then: "sub terra et supra virgulta non eodem tempore aequae crescunt: nam radices autumnno aut hieme magis sub terra quam supra alescunt, quod tectae terrae tepore propagantur, supra terram aere frigidior coguntur" [34]. Information about plant roots is to be found scattered in Theophrastus' botanical writings, but the problem is given a general treatment in C. P. I, 12. First, he discusses the view held by Varro, that the root grows in winter, the part above ground in summer (pars. 1-4: τινές φασι . . .); then he advances the opposite view, that the growth is simultaneous below and above ground. Theophrastus himself is inclined to hold with the latter view, and consequently Hempel must conclude [35] that Varro is unacquainted with Theophrastus' basic treatment of this problem also. In this, however, he is by no means correct. Varro is dealing with the tending of the nursery in winter, and the observations on the growth of the root are, of course, intended to support the instructions for protecting the newly planted cuttings and suckers from frost. This ἐν ταῖς μετοπωριναῖς φυτεῖαις (par. 2) is just where Theophrastus says that it is correct that the root grows in winter. Consequently, we see Varro extracting such arguments from Theophrastus' discussion as are applicable to the nursery, while leaving the main conclusion alone. Whereas Hempel maintains that Varro copies an imaginary source mechanically—if with mistakes—the context indicates the opposite. He uses botany for support where he can—here to support his recommendation that new plants are covered in winter. However, in the passage of Varro quoted above, as in the following lines, there is also a striking verbal agreement with other passages in Theophrastus' writings, so that here too a co-ordination of passages must be presumed. References to the relevant passages are to be found in Gentili's article [36], and it is not necessary to repeat a demonstration of this co-ordination in detail. Everything seems to indicate, however, that Varro's popular observations on the growth of the root in winter have as their direct source

34. "coguntur" is Keil's correction for the unintelligible "tinguntur" of the Mss.

35. Op. cit. pp. 43 sqq.

36. Op. cit. p. 121.

Theophrastus' arguments and discussion about the problem. It is not the results of the botanist's research, but fragments of his argumentation that interest the agricultural writer. The fact that Varro in this way comes into conflict with Theophrastus' main views, does not bother him, as it is a matter of two separate disciplines with only a few points in common—the points Varro himself extracts.

If we consider the relationship between Varro (Chapters 44,3–46) and Theophrastus, it looks as follows:

Varro	Theophrastus	Type of context
44,3 rotation of crops in Olynthos	= C. P. I, 20, 4	brief excerpt about olives wrongly applied to rotation
44,4 breaking of the cycle	= C. P. I, 14, 2	argument adapted to the context
45,1 periods of germination	= H. P. VIII, 1, 5	translation and supplementing, in part from VIII, 1, 1
45,2–3 growth of roots	= C. P. I, 12, 1 C. P. III, 3, 4 H. P. I, 7, 1	co-ordination of arguments
46 exemplifications	= H. P. I, 10, 1 C. P. II, 19, 1 H. P. VII, 15, 1	co-ordination

The most surprising feature is the virtuosity with which, in this very short passage, Varro jumps about in Theophrastus' extensive botanical writings. Especially when one takes into consideration the fact that the ancient roll is impossible to use to check references quickly, it must be presumed that Varro has made use of excerpts, and that these excerpts have been used in the writing of the treatise. Where we have a co-ordination of several passages, it is hardly possible to decide whether it is a matter of co-ordinating several excerpts, or of Varro supplementing an excerpt from memory. Both procedures have probably been used. As to the contents, we find a use of Theophrastus far exceeding the exemplifications we have considered until now. Here it is rather a matter of botanical arguments used in support of agricultural instructions—in other words, botany as an ancillary science. Especially because the passage examined feels strangely disjointed as far as its contents are concerned, the theory that Varro mechanically copies an imaginary source must be rejected. The agriculturally inadequate instructions in Stolo's "gradus nutricandi" cannot—unless there are other reasons—be ascribed to lost writers whose methods we do not know. The reasons advanced by Hempel in each case have been rejected in the above. When, in addition, the whole context of the passage examined tells against indirect transmission, we must conclude that Varro has made direct use of Theophrastus. In my opinion, this also applies to the preceding part of Stolo's discourse, the "gradus serendi", in which connection Hempel [37] has been at special pains

to show it to be impossible that Varro knew Theophrastus' exposition of the subject. In my opinion, a comparison between Theophrastus and Varro on this very point will show how Varro uses his source. It will, therefore, be necessary to examine the relations between the two writers' treatment of this subject, but in the following I shall devote less time to polemics against Hempel, as I consider it sufficiently well established that Varro did in fact use Theophrastus, and that Hempel's proofs to the contrary are based on a lack of understanding of Varro's method of working.

The "gradus serendi" (Chapters 39–44,3), as already shown in Examples III and IV, contains exemplifications which Varro ascribes to Theophrastus by name. Besides, Schneider had already mentioned the fact that the systematic arrangement of *semina* is closely related to that of Theophrastus. At first sight, the similarities may not be so conspicuous. At the beginning of Book II of Hist. Plant., Theophrastus divides the reproductive methods of trees and plants as follows:

1) γένεσις αὐτόματος	=	πρώτη τις
2) γένεσις ἀπὸ σπέρματος	}	φυσικώταται
3) γένεσις ἀπὸ ρίζης		
4) γένεσις ἀπὸ παρασπάδος	}	τέχνης καὶ προαιρήσεως
5) γένεσις ἀπὸ ἀκρεμόνος		
6) γένεσις ἀπὸ κλωνός		
7) γένεσις ἀπὸ στελέχους		
8) γένεσις τοῦ ξύλου κατα- κοπέντος εἰς μικρά		

To these types must be added grafting and shield budding, regarded as special categories, differing from the others only in that the planting is done, not in the ground, but in another tree. These two categories are dealt with in C. P. I, 6. We may therefore be justified in supplementing the list with:

- 9) ἐμφυτεία
- 10) ἐνοφθαλισμός

Unfortunately, Theophrastus' description of the first eight categories is rather theoretical for our purpose, and understanding the precise meaning of some of the words presents great difficulty. In particular, the difference between ἀκρεμών and κλών is vague, as Theophrastus himself points out elsewhere [38]. Generally, it must be recognized that the reproduction of plants is here considered from a morphological and botanical viewpoint, and none of the Roman writers using the classification has adhered to it in detail. Both Vergil and Pliny consider more practical forms of reproduction, e. g. layering. Varro, on the other hand, radically reduces the list to four different types of *semina*, his principal concern being the

38. R. Strömberg, in *Theophrastea* (Gothenburg 1937), points out on p. 141, that for "sprig" or "branch" there are innumerable terms in Greek, and quotes C. P. V, 1, 3.

actual process of sowing or planting. That this is a very drastic simplification he is himself perfectly well aware, since he introduces the division with these words: "cum semina sint f e r e quattuor generum". If we consider Varro's classification in relation to Theophrastus', it looks like this:

I. <quae natura dedit>	{ quod latet	= γένεσις αὐτόματος
	{ quod apertum	= γένεσις ἀπὸ σπέρματος
II. quae transferuntur e terra in		= γένεσις ἀπὸ ρίζης καὶ ἀπὸ
terram viva[s] radice[s]		παρασπάδος
III. quae ex arboribus dempta		= γένεσις ἀπὸ ἀκρεμόνος καὶ ἀπὸ
demittuntur in humum		κλωνός
IV. quae inseruntur ex arboribus in		= ἐμφυτεία καὶ ἐνοφθαλισμός.
arbores		

It is worth noting the nice linguistic parallelism in Varro's formulation of the last three groups. Furthermore, it is evident that there is no question of an exact parallel with Theophrastus' classification, Varro's group II including both planting in the nursery, and transplanting from nursery to plantation or field. Hence, the actual systematization gives no indication of any direct use of Theophrastus, and it would certainly be rash to attribute it to anybody but Varro himself. We have already seen Varro's way of systematizing, and the above is an excellent case in point. The analysis is satisfactory only on the surface, as important factors are missing. Through the simplification Varro distorts the picture, and several phenomena of great practical importance are omitted, above all layering and shield budding. The components of group II can have been classified together only on purely external considerations. The dependence upon Theophrastus becomes even clearer when we examine Varro's description of the separate groups in connection with Theophrastus. In the following, the validity of this view will be examined.

Primum Semen. The description is followed by the above mentioned definitional analysis which was based on Theophrastus, as has been proved. Through this, Varro arrives at the group: "quod apparet ad agricolas", but adds that some seeds are so small as to be difficult to discern, exemplified by the seed of the cypress. This exemplification builds upon Theophrastus, C. P. I, 5,4, where the same cypress seed is the example given of a seed which is so small that it is difficult to gather. What interests Varro in this connection, however, is not the difficulty in gathering, but the explanation of the nature of the actual seed. It would not be very fruitful to look for evidence of verbal correspondence between Varro and Theophrastus here, as Varro uses words, the exact meaning of which is not quite clear. The exemplification must be considered parenthetical, the definitional analysis continuing until we are told of the group of *semina* that is of particular interest. In other words, a learned footnote. Finally, we get three rules about seed corn: it should not be too old, it should not be mixed, and special care should be taken that it is not mixed with similar-looking seed. The reason is that

old seed may produce quite a different plant. The example given is that of old cabbage seed (*brassica*) which may produce turnips (*rapa*), and vice versa. Correspondingly, Theophrastus mentions that barley can become wheat (*Hist. Plant.* II, 2,9), but does not believe it himself. In the context in question he is mainly interested in mutations caused by moving plants from one place to another, and of course, this cannot be a “source” in the narrow sense. Pliny mentions Varro’s example (*Nat. Hist.* XIX, 176) under plant diseases, but as no reference is made to Varro, we cannot know for certain if our passage is his source. This completes the treatment of *primum semen*, though nothing has been said about the actual sowing.

Secunda Semina are dealt with very briefly. The time for planting must be observed. Here there is a direct reference to Theophrastus with the words: “tempus . . . idoneum, quod scribit Theophrastus, vere et autumnno et caniculae exortu” (40,3), to be compared with *C. P. I.* 6,3: εὐλογοὶ δὲ καὶ αἱ ὥραι μᾶλλον δὲ ἴσως ἀναγκαῖαι καθ’ ἃς καὶ ὅλως ἐπιβλαστήσεις γίνονται μετόπωρόν τε καὶ ἔαρ καὶ κυνὸς ἐπιτολή. This indication of time in Theophrastus refers to grafting and shield budding. Varro goes on: “in sicco et macro loco et argilloso vernum tempus idoneum, quo minus habet umoris: in terra bona ac pingui autumnno, quod vere multus umor, quam sationem quidam metiuntur fere diebus XXX”, to be compared with *C. P. I.* 6,9: καὶ λεπτογείῳ μὲν ἄμεινον τὸ ἔαρ· οἰκεῖον γὰρ οὕτως διὰ τὸ ὀλίγον ἔχειν τὸ ὑγρόν· ἐν δὲ τῇ ἐνυγείῳ καὶ πηλώδει τὸ μετόπωρον· τοῦ γὰρ ἥρος πολλὴ λίαν ἡ ὑγρότης πρὸς τὸ διατηρεῖν ἕως ἔτι διαμένει τὸ δάκρυον, ὀρίζονται δὲ τινες τοῦτο τριάκονθ’ ἡμέραις.

There is a very close connection between the two passages, but Theophrastus’ instructions still apply to grafting. In his hurry, Varro has carried his abbreviations a little too far, so that Theophrastus’ thirty days become connected with the spring planting, and not with τὸ δάκρυον. The simplest explanation of why Varro links a time indication with the wrong group is that his excerpts have become disarranged [39], as was previously proved to be the case in Example IV. Nor, if we look at the agricultural calendar, do we find any planting in July-August, whereas the grafting of figs and other trees should be done from the middle of July to about 1st September (*Columella XI*, 2,59). Hardly any plant will survive transplantation in the scorching Italian summer, and Varro’s misplaced excerpt has thus produced a serious mistake, which cannot reasonably be ascribed to any slavishly used intermediary source. Only haste and carelessness can explain a mistake such as this.

Tertium Genus Seminis comprises reproduction by shoots. The proper time is just before budding, a rule taken from Chap. 30 of the agricultural calendar, the period between the vernal equinox and the rising of the Pleiades (cf. p. 58).

39. Here, Hempel thinks better of Varro; cf. p. 51: “Tam inauditum errorem equidem fieri potuisse non credo, si Varro ipse Theophrastum adhibuisset. Etsi enim dicas Varronem, cum hos libros componeret, Theophrastum ipsum jam non ante oculos habuisse, sed potius excerpta, quae fecerat, exscripsisse, tamen ita effectum esse, ut ejusmodi perturbationes orerentur, nemini facile persuadeas”.

The meaning of the next sentence is enigmatic on account of the present uncertainty as to the exact difference between “defringere” and “deplantare” [40]. The fact that the shoot must be planted before it gets too dry may be quite correct (cf. Columella De Arb. 3,3). Varro particularly mentions olive shoots, which are called “taleae” or “clavolae”, “ex utraque parte aequabiliter praecisum”, a foot and a half long, with which can be compared Col. V, 9,3. None of these instructions is immediately attributable to Theophrastus, and any suggestion of other authorities must be conjecture. However, we have here instructions of so brief and general a nature that we cannot assume a mechanical copying of another agricultural work, and the mention of olive shoots contains a typical Varroian explanation, which consequently, in its present form, should be attributed to Varro himself.

Quantum Genus Seminis, comprising grafting, is by far the most thoroughly treated type. It opens with the brief plan of the content: “videndum qua ex arbore in quam transferatur et quo tempore et quem ad modum obligetur”. Hence, we cannot expect a description of the normal grafting technique as such, since it must be supposed to be generally known. In the light of the overall structure of the treatise, it can hardly be a surprise that Varro does not feel bound by the outline given. True enough, the treatment does begin with point (1): the grafted shoot and the foster tree must be related species. The rule is given in the form of an exemplification introduced by “enim”. To this is added an observation of a religious-historical nature. Then we learn that the fruit produced by grafting a cultivated pear on to a wild pear will be inferior to the fruit resulting from grafting on to a cultivated pear. This information is in direct contradiction to Theophrastus (C. P. I, 6,10) and the experience of our own time. Nor is the obvious rule that a superior variety should be grafted on to an inferior tree to be found in Theophrastus [41]. With this the problem of selecting the shoot to be grafted and the foster tree is concluded, but instead of a discussion of the exact

40. “et quae de arbore transferas ut ea deplantes potius quam defringas”. Keil understands “deplantare” as “propagare”, in which sense it should also appear in Chap. 43: “de cytiso duriore virgulae deplantantur, et ita pangitur in serendo”. Cytisus must here be the shrub-trefoil, “medicago arborea”; cf. André, *Lexique des termes de botanique*. Only, “pangere” is not a verb which is used of layers, but rather of cuttings, e. g. “pangere malleolos” (Columella III, 12, 3). But Varro uses the word “deplantare” in both places. Quite a different meaning is given by Gesner in his *Lexicon Rusticum*: “significat ab ipsa stirpe vel majore ramo revellere, ut surculus ita avulsus latiore basin habeat”. This view is repeated by Schneider referring to Pliny Nat. Hist. XVII, 67. Storr-Best and Boyd Ash follow this meaning, the latter referring to Columella II, 2, 26, in which only the meaning “tear off” makes sense. I can add nothing new to this. Keil is alone in interpreting *deplantare* = *propagare*, for which there is no certain evidence in agricultural terminology. In the present description Gesner’s interpretation is followed, which means that layering is not mentioned by Varro at all.
41. For the opposite view cf. Hempel, *op. cit.* p. 54: “sententia ... expressa est sine dubio ex c. pl. I, 6, 10”. Here, however, only grafting on to a wild tree is mentioned. I understand Varro’s “melioe genere ut sit surculus” to mean that the shoot to be

time for grafting, we get the description of a special grafting technique, according to which the grafted shoot is not cut off the parent tree until the shoot has taken a firm hold in the foster tree. The technique is said to be “nuper animadversa”. Now the outline is broken, but as Varro does not mention the ordinary grafting technique at all, this “altera species” must be regarded as a kind of footnote or digression. The problem is why Varro calls it “nuper animadversa”, when it is, in fact, described by Cato (agr. 41,2), and had thus by Varro’s time been known for more than a hundred years. The simplest explanation is that this description is based on an excerpt of an earlier Roman agricultural writer, from whom the expression “nuper animadversa” has been taken over. Mistakes of this nature are quite common in Pliny’s Nat. Hist., but Pliny refers this grafting technique to Cato (Nat. Hist. XVII, 115), who is hardly Varro’s direct authority [42].

Chap. 41 continues, in accordance with the outline, with the words: “quo tempore qua(e)que transferas, haec in primis videnda”, and what follows does not leave a very reassuring impression of Varro’s use of previous literature. Sentences from Theophrastus are intermingled in a surprising manner, so that in the end their meaning is quite different. In Theophrastus’ treatment of grafting and shield budding (C. P. I, 6) some features common to the two methods of reproduction are mentioned first, and the divergencies are then juxtaposed as contrasts. As Varro makes no distinction between the two categories, we get now a rule for grafting, now one for shield budding. According to Theophrastus, shield budding cannot stand up to water, whereas a grafting must not dry out completely. Varro classifies the trees according to the type of the wood: some do not have “densa materia” (e. g. the fig), others are “minus mollia” by nature. The connection with Theophrastus is apparent in the following juxtaposition:

aqua recenti insito inimica: tenellum enim cito facit putre. itaque [qui fit] caniculae signo commodissime existimatur ea (i. e. ficus) inseri. quae autem natura minus sunt mollia, vas aliquod supra alligant, unde stillet lente aqua, ne prius exarescat surculus, quam colescat.

τὸ δ’ ὕδωρ τῷ μὲν ἐνοφθαλμισμῷ πολέμιον· ἐκσῆπει γὰρ καὶ ἀπόλλυσι παραρρέον διὰ τὴν ἀσθένειαν· δι’ ὃ καὶ ἐπὶ κυνὶ δοκεῖ ἀσφαλέστατος εἶναι. τῇ δ’ ἐμφυτεία χρήσιμον ἂν μὴ ἡ ὕγρὸν τῇ φύσει· δι’ ὃ καὶ οἱ μὲν αὐτῷ πηλὸν ἐπικολλαίνουσι, οἱ δὲ χύτραν προσβάλλουσι ὕδατος ὥστε κατὰ μικρὸν ἐπιρρεῖν.

grafted must be of a superior variety, a matter in which there is a considerable divergence of opinion between Theophrastus and Varro.

42. It must be noted, however, that “nuper” can also denote the recent compared with the more distant past, e. g. in Cicero, De Nat. Deorum, II, 126: “nuper, id est paucis ante saeculis”. Columella also mentions this special grafting technique, De Arb. 27 and De Re Rust. V, 11, 13. There is no reference here to his predecessors, but the method, which is described in some detail, is especially to be recommended in the

Varro's formulations are quite close to Theophrastus', but the instructions are applied to quite different things. The division according to the quality of the wood also forms a smooth transition to the new element of the outline: "quo modo obligetur". As will appear from the following, Varro is still quite close to Theophrastus:

cujus surculi corticem integrum servandum et eum sic exacuendum, ut non denudes medullam

ne extrinsecus imbres noceant aut nimius calor, argilla oblinendum as libro obligandum.

§ 3: itaque vitem triduo antequam inserant desecant, ut qui in ea nimius est umor defluat, antequam inseratur; aut in qua(m) inserunt, in ea paulo infra, quam insitum est, incidunt, [in] qua umor adventicius effluere possit. contra in fico et malo punica et si qua(e) etiam horum natura aridiora, continuo.

par. 7) ὀρθῶς δὲ καὶ διατηρεῖν ἄρρα-
γῇ τὸν ὀφθαλμὸν καὶ τὸν φλοιὸν καὶ
τὸ ἔνθεμα οὕτως ἀποξύνειν ὥστε μὴ
γυμνοῦν τὴν μήτραν· ῥαγέντος γὰρ ἡ
γυμνωθείσης ἀναξηραίνεται καὶ δια-
φθείρεται. διὰ τοῦτο γὰρ καὶ περιδοῦσι
φιλύρας ἔξωθεν φλοιῷ καὶ ἐπὶ τούτοις
περιαλείφουσι πηλῷ τετριχωμένῳ
ὅπως ἔμμονος ἢ ὑγρότης ἢ καὶ μήθ' ἥ-
λιος μήθ' ὕδωρ μήτε ψύχος παραλυπῇ.

par. 8) χρή δὲ καὶ τῆς ὑγρότητος τῆς
αὐτῶν συμμετρίαν τινὰ ὑπάρχειν. δι' ὃ
καὶ τὴν μὲν ἄμπελον προαποτέμ-
νουσιν ἡμέραις τρισὶ πρότερον ὅπως
προαπορρυῇ τὸ δάκρυον καὶ μὴ σή-
πηται μηδ' εὐρωτιᾷ. ῥόα δὲ καὶ συκῇ
καὶ ὅσα τούτων ἐστὶ ξηρότερα παρα-
χρήμα.

In almost every instance here, Varro introduces an abbreviated translation of Theophrastus. In the beginning of par. 3, the "itaque" of the translation = δι' ὃ has become meaningless, because the immediately preceding sentence in the source has been omitted. Where the insertion "aut ... effluere possit" originates from cannot be established. In my opinion, this interruption of the translation does not in itself prove that the information is handed down from Theophrastus indirectly. Varro has consciously abbreviated his Theophrastus and elaborated the description on one point. Shield budding and grafting have also been consciously assimilated into one class in order to simplify the division. The mistakes here can-

case of grafting on to a foster tree of a different variety. Columella has himself experimented with the method, and the technique is described on the basis of an experiment at grafting an olive on to a fig. It is strange that Columella makes no reference to the treatment of this method by earlier writers, as the entire passage is polemically directed against the opinion of "the ancients" that grafting is impossible on a tree of a different variety, in other words the opinion advocated by Varro. It also appears from Columella's description that this particular technique is far from common. For modern experiments with the method, reference can be made to R. M. Barzen: *Neue Arten der Rebenveredlung* (Neustadt 1958), pp. 87 sqq.

not be due to the excerpting, as the passages in Theophrastus that are used, are not open to misunderstanding. Any excerpt Varro may have used in this connection, must often have contained the words ἐνοφθαλισμός or ἐμφυτεία. Also, the comparison between the four *genera seminum* that follows, clearly shows that Theophrastus has been used. Various licences in translation have been pointed out and denounced as mistakes—but a brief analysis will show that in Varro's presentation they are quite justified. He by no means feels bound by his source.

par. 4: de his primis quattuor generibus seminum quaedam quod tardiora, surculis potius utendum, ut in ficetis faciunt.

C. P. I,8,1: εὐβλαστῇ δὲ καὶ εὐαυξῇ τὰ ἐκ τῶν φυτευμάτων μᾶλλον ἢ ἐκ τῶν σπερμάτων εὐλόγως, ἄλλως τε καὶ ὑπόρριζ' ἂν ληφθῇ.

Here too, Varro is close to Theophrastus, but he has altered the sense so that the words fit his own fourfold division.—At the same time he considers the matter from the farmer's point of view and advises the use of cuttings for slowly growing trees, whereas Theophrastus, speaking as a botanist, merely states that cuttings grow more quickly. Moreover, Varro exemplifies with the words: "ut in ficetis faciunt" and introduces a short digression on the true nature of the fig seed. The idea of littleness is continued in the following, again inspired by Theophrastus:

omnia enim minuta et arida ad crescendum tarda, ea quae laxiora, et fecundiora, ut femina quam mas et pro portione in virgultis item: itaque ficus, malus punica et vitis propter femin(e)-am mollitiam ad crescendum prona, contra palma et cupressus et olea in crescendo tarda.

par 2.) τὰ μὲν γὰρ πυκνὰ καὶ ξηρὰ δυσάυξητα . . . Θατέρου δ' ἐν ὀλίγῳ πολλῇ (viz. ἐπίδοσις) διὰ τὴν μανότητα

par. 4) φανερόν δὲ καὶ ἐπὶ τῶν ἄλλων ζώων τοῦτο συμβαῖνον καὶ μάλιστα ἐπὶ τῶν ἀνθρώπων· εὐαυξέστερα γὰρ τὰ θήλεα τῶν ἀρρένων ὑγρότερα καὶ μανότερα τὴν φύσιν ὄντα. δῆλον δὲ καὶ ἐπ' αὐτῶν τῶν δένδρων· ῥόα μὲν γὰρ καὶ συκῇ καὶ ἄμπελος εὐαυξῇ, φοῖνιξ δὲ καὶ κυπάριττος καὶ δάφνη καὶ πεύκη καὶ ἐλάα δυσάυξῃ.

Theophrastus is speaking about firmness, but Varro boldly changes it to littleness, because that suits the exemplification "ut in ficetis" and the information on the nature of the fig seed. Of course, this appears to us a strange use of a scientific source, but it fits in very well with the impression we are gradually forming of Varro's relationship to Theophrastus. In the last parallels from Theophrastus also we find a co-ordination of quotations and adaptations from scattered places in Book I of C. P., which again, in my opinion, implies the use

of excerpts. If so, it will be a reasonable thought that some at any rate of the adaptations were made only in the final composition of our treatise.

The above examination has shown that Varro works very freely when making use of Theophrastus. Especially for his exemplifications and botanical arguments he picks out what he needs and cuts the text according to his own purposes, without paying any attention to the possibility that he may come into conflict with his great predecessor. Scattered bits of the latter's argumentation are pieced together, with a new meaning as the result, and it sometimes happens that an excerpt is wrongly inserted, thus producing errors of fact; this is not a common occurrence, however. The mistakes seem in part to be caused by haste; the excerpts may have been so short that the original meaning has vanished; but they are also due to Varro's penchant for systematization—even though the result does not correspond to the actual facts. This is much in evidence in his treatment of grafting and shield budding, and we probably have to conclude that, as far as this subject is concerned, Varro's practical knowledge did not suffice. He was not able to consider critically what he prepared for writing on the basis of diverse excerpts. His use of literature cannot be described as mechanical; if so, a number of the mistakes mentioned would have been avoided.

Apart from the arguments already mentioned, each of which has been advanced against the thesis that Varro knew Theophrastus only at second hand, an overall consideration of the parallels dealt with above will make that thesis even more improbable. The variety of subjects and the interest in the unusual are hardly compatible with the theory that all this is miscellanea taken from one single agricultural work. These are the very features that make Varro's treatise a learned one, and often the most typical examples of the use of Theophrastus are to be found in Varro's exemplifications and classifications, both characteristic features of his method of working. Thus, everything indicates that Varro, when writing his treatise, has made use of his collections of excerpts—possibly verifying occasionally by a reference to the original text. Nor can we disregard the possibility that some of the Theophrastus passages were transmitted indirectly, but in most cases a direct use of this author can be considered to be proved [43].

This, however, destroys Hempel's thesis. Basing himself on his interpretation of the relationship between Theophrastus and Varro, he concludes that the latter's use of earlier literature was based in almost every case on a mechanical use of one source—or, at any rate, very few sources. Conversely, the conclusion of the present examination must be that Varro read extensively, and excerpted from, his sources, named as well as unnamed. The extent to which he used individual writers probably varied with their usefulness. Theophrastus had to be adapted, whereas proper agricultural writers could be used directly. The latter procedure is clearly illustrated by all the passages where Cato has been used. Here it should be noted that a large number of the Cato quotations in the first half of the

43. Cf. the observations in the article on Theophrastus, *RE Suppl* 7, coll. 1439 sq., in which is maintained a different conception of Varro's use of Theophrastus.

dialogue are brought in by Stolo in the form of interruptions or corrections. Thus they acquire a dramatic function in the dialogue. Moreover, there are also examples of Cato's text being adapted according to the context in which Varro wished to use it. A typical case in point is the use of Cato's Chap. 7. This is a description of the trees that can be profitably grown on a *fundus suburbanus*. As in a number of cases a comment is added on their use, Varro uses part of the chapter in Stolo's passage on the "gradus tuendi" (I, 58):

Varro

Cato ait uvam aminneam minusculam et majorem et apiciam in ollis commodissime condi: eadem in sapa et musto recte: quas suspendas opportunissimas esse duracinas et aminneas [scantianas]. de pomis conditiva, mala struthea, cotonea, scantiana, scaudiana, orbiculata et quae antea mustea vocabant, nunc melimela appellant, haec omnia in loco arido et frigido supra palea<s> posita servari recte putant.

Cato

fundum suburbanum arbustum maxime convenit habere: et ligna et virgae venire possunt, et domino erit qui utatur.

in eodem fundo suum quidque conseri oportet: vitem copularia Aminnium minusculum [vino] et majus et Apicium: uvae in olla in vinace<i>s conduntur: eadem in sapa, in musto, in lora recte conduntur. Quas suspendas duracinas Aminnias majores, vel ad fabrum ferrarium pro passis ea<e> recte servantur. poma, mala strutea, Cotonea Scantiana, Quiriniana, item alia conditiva, mala mustea et Punica (eo lotium suillum aut stercus ad radicem addere oportet, uti pabulum malorum fia[n]t), pira volaema, Aniciana [et] sementiva (haec conditiva in sapa bona erunt), Tarentina, mustea cucurbitiva, item alia genera quam plurima serito aut inserito.

As will appear from the above juxtaposition, Varro has taken over and adapted what he needs. In addition, he has supplemented the description from another source—or he has added new matter himself, although "putant" suggests that there was another source. He has also made room for a learned remark of a change in the name of a variety. The fact that the trees involved are particularly suited to a *fundus suburbanus*, i. e. to the production of fruit with a view to sale, does not appear at all.

We have found one instance of an actual discussion of Cato's views compared with those of Saserna (cf. p. 16 sq.), but this must be considered an exception. As a rule, Cato is used directly.

The question whether Varro has used his other Roman predecessors in a

similar way cannot be settled, as they are all lost. It must be pointed out, however, that their part in the dialogue is much more unobtrusive than that of Cato. The relationship with Scrofa cannot be defined further, and it is equally impossible to establish whether Stolo actually did write on farming. As to the relationship with Mago and his excerptors, not much of them is left, apart from the descriptions of the appearance of livestock and the Theophrastea wrongly maintained by Hempel to be transmitted that way. Diophanes and Cassius are both mentioned by Varro as sources a few times, but, apart from that, few signs of their influence can be traced. When Hempel produces all the passages in the *Geoponica* showing some resemblance, however, faint, to Varro's text, he can certainly muster quite a few, but, unfortunately, on closer examination the resemblance turns out to be illusive, and—at any rate as far as Book I is concerned—it cannot be proved that there is a common source used by Varro on a wider basis, a source which, if it exists, could be the excerptors of Mago [44]. In the present *Studies*, however, the problem of sources in general is of minor interest. That Varro copies his predecessors is a well-known fact and was to be expected. Of interest here is the way in which Varro uses the technical literature, and we must take his use of Theophrastus as an illustration of the degree to which the most learned of all Romans can distort a source, partly to make details fit in a new whole, partly simply because he is in a hurry and handles his excerpts with insufficient care. That there are not more such mistakes that transform the sense may be attributed to the fact that Varro did possess some knowledge of farming; but the lack of information on so many purely technical matters must be due to the character with which Varro wanted to invest his description.

44. Hempel, *op. cit.* p. 75, compares a number of parallels which are supposed to show the connection between Varro and the *Geoponica*. The verbal correspondence is not marked, and does not allow for the conclusions mentioned. It is again a question of the description of the appearance of livestock, which has already been mentioned (p. 67).

VARRO AS A WRITER

Modern research has resulted in many different evaluations of Varro's agricultural treatise. As will have appeared from Chapter V, the severest criticism comes from those scholars whose works are based on criticism of the sources. Their viewpoint was already expressed very clearly by Gentili: "an quidquam agri cultura profecerit Varroniano opere dubitamus" [1]. Almost the same view is presented by Gummerus in his work, *Der Römische Gutsbetrieb*, which is of such great importance for the economic history of Rome: "Überhaupt zeigt sich Varro in seinem ganzen Werke mehr als Stubengelehrter denn als praktischer Landwirt. Besonders im Ersten Buche scheint das, was er auf dem landwirtschaftlichen Gebiete im engeren Sinne aus eigener Erfahrung mitteilt, ziemlich unbedeutend zu sein" [2]. From another point of view Varro's tendency to over-systematize has been especially stressed. Hirzel speaks of "ein starres Fachwerk von Dogmen und Recepten" [3], whereas Fuhrmann, who approaches the systematization as an isolated problem, seems to consider it an advance in the history of the scientific textbook [4]. Conversely, Münzer refers to the treatise as Varro's "liebenswürdige anscheinend frei niedergeschriebene Plauderei" [5]. These quotations, a few picked out from among many, prove the desirability of a new appraisal founded on a wider basis. A characteristic feature of the evaluations of most scholars has been that they were based on an examination of one aspect only. The present attempt at an evaluation is based on a more comprehensive view.

The actual treatment of the subject clearly shows that Varro attaches great importance to placing agriculture in its theoretical context; this is expressed in Chap. 4 by the description of it as being *ars* as well as *scientia* [6]. The whole

1. Op. cit. p. 158.

2. Op. cit. p. 54.

3. Op. cit. Vol. I, p. 554.

4. Op. cit. pp. 163 sqq. The advance, however, must probably be considered on the basis of a comparison with Cato's *De Agri Cultura*; cf. Fuhrmann's acceptance of Fehling's assessment of Varro, p. 192.

5. Op. cit. p. 150.

6. The importance of these two concepts in Varro appears from a fragment, hitherto, in my opinion, rather neglected, preserved in Victorinus (ed. Halm, *Rhetores Latini Minores*, 1863, p. 170, 24): "Omnis ars duplex est, id est, duplicem faciem habet secundum praeceptum sententiamque Varronis, qui ait esse artem extrinsecus

of the introduction to the dialogue serves to establish this. On the other hand, the treatise cannot be said to be an exhaustive manual of farming. For that purpose it is too short, and we have frequently noticed how Varro consciously simplifies in his systematization and abbreviates in his exemplification. In this connection it is worth pointing out that Book I is dedicated to his wife, Fundania. In other words, it is not designed for the professional farmer, but for the senator's wife who has bought an estate, and who wants the capital invested to yield the best possible interest. Cato's heterogeneous notes are written by a man who prides himself on having worked in the fields as a young man [7]. Columella's work is the gentleman farmer's encyclopedia, intended to include everything [8]. Varro's book, however, is laid out as a short, theoretical treatise, to which Fundania can revert when her husband is no longer at hand to advise her. What she needs, of course, is a general outline rather than specific technical instructions, which her *vilicus* knows far better anyway. This fact in itself represents a basic difference from the other agricultural literature known to us. Varro seems to be indicating this purpose when, in the introduction to Book I, he refers to the three books as "indices", in other words compendia or surveys [9]. In different terms, his intention may be described as one of popularization.

Moreover, in his introduction, Varro, now an octogenarian, makes no secret of his sense of urgency. Consequently, the interpretation that tries to see many peculiarities in the treatise as the result of haste is borne out by Varro's own words. A short recapitulation of the result of the examinations made in the previous chapters will show that everything points to that explanation.

The plan of the treatise is rigid in outline—but not adhered to. On several points we can see the breach of the outline being caused by a new train of thought branching off from the original one. In the systematization of separate

unam, aliam intrinsecus. Ars extrinsecus talis est, quae nobis scientiam solam tradit, intrinsecus, quae ita dat scientiam, ut illud ipsum, quod scientia dat, quibus rationibus faciamus ostendat". If Victorinus has rightly understood Varro, "ars" is a higher concept than "scientia", and when agriculture in our treatise is described both as "ars" and "scientia", Varro seems to intend to underline the theoretical character of the treatise.

7. See the famous fragment from the speech *De Suis Virtutibus* (Malcovati: *Oratorum Romanorum Fragmenta* (2), no. 128).
8. A useful survey of Columella's firm hand in the planning of his vast material is given by Kappelmacher in the article on Junius Moderatus Columella, *RE* vol. 10, coll. 1056 sqq.
9. I, preface 4: "scribam tibi tres libros indices ...". It is, of course, a difficulty that Varro here seems to dedicate all three books to Fundania, and yet does in fact dedicate Books II and III to others. Hirzel (op. cit. p. 555, note 2) suggests an emendation, which should not be accepted, however. Others have suggested that Fundania has died between the writing of Book I and Book II. This does not seem reasonable; cf. Cichorius, *Römische Studien*, pp. 206 sq., where Fundania is connected with a later inscription from Sardinia (Dessau 5409). It should be borne in mind here that Varro also seems to have been somewhat careless about the dedication of the *De Lingua Latina*; cf. Karl Barwick: *Widmung und Entstehungsgeschichte von Varros De lingua Latina* (Philologus vol. 101, 1957, pp. 298 sqq.).

problems we meet a similar looseness of method. Some analyses mix incompatible quantities, others seem out of place and unintegrated, others again are pedantic definitions of banalities. Further, the principles according to which Varro adds concrete examples to his description seem rather loose; the agricultural calendar has in some places too much, in others too little, commentary. In the agricultural calendar, as well as elsewhere, we not infrequently find instances of sources being handled very carelessly, a fact which suggests that Varro has accidentally been mixing up his excerpts, and shows the bold superficiality with which he picks from previous literature the passages that in his opinion serve his purpose. This, however, is mainly noticeable when he uses Theophrastus, whose subject only borders on Varro's field of interest. The fact that the treatise is not tarnished by more mistakes is probably due to the fact that Varro—like all Romans—has some knowledge of agriculture. All these things taken together most certainly confirm the assumption that Varro was in great haste, and had no time to apply the finishing touches with which we know, e. g. from the letters to Atticus, that Cicero polished up his writings. If to this we add the linguistic form, which, according to Norden's classic definition, is all but unworthy of being called a style at all [10], we can hardly avoid drawing the conclusion that Varro was an extremely quick writer, though it is not necessary to go to the arrogant lengths of Remmius Palaemon, who called him *porcus* [11]. It will hardly be possible in this connection to argue that Books II and III are much more carefully constructed. In these two books Varro was facing subjects which, by their very nature, lend themselves much more easily to systematization, whereas the work of the ordinary farm is so diffuse that a description cannot be forced into a schematic arrangement without many things being left out or mentioned in contexts where they do not belong.

One might then ask why Varro ever chose this form, unsuitable as it is for his

10. Die antike Kunstprosa, vol. I, p. 195, on De Lingua Latina. This assessment of our treatise is slightly milder: "Erheblich besser sind begreiflicherweise die Bücher über den Landbau geschrieben, in denen er viel Mühe auf die Form verwandt hat: aber auch in ihnen wird man vergeblich nach der Kunst ciceronianischer Periodisierung suchen, während man sich häufig an die Sprache des Gesetzesstils erinnert fühlt".
11. Suetonius: De Grammaticis, Chap. 23. Varro's style has also been recently evaluated. J. Heurgon ends his article: L'Effort de style de Varron dans les Res rusticae (Rev. de Philologie, 1950, pp. 57 sqq.) with the words: "On peut concevoir toutefois que si Varron avait eu plus de facundia, plus de facilité oratoire, il ne nous aurait pas laissé, dans sa savoureuse fraîcheur, une vision souvent aussi directe des choses". This is in fact a very severe judgment of Varro's stylistic abilities. The main problem is that fragments of other literary works indicate that Varro knew perfectly well how to write. E. Laughton, in his examination: Observations on the Style of Varro (The Classical Quarterly 1960, pp. 1 sqq.), arrives at a different result. At the beginning of the preface he says (p. 3): "He excuses the haste with which he is going to write on the grounds of his advanced age, but we may well believe that his encyclopaedic fever had long ingrained in him the habit of writing as rapidly as possible, without pause to recast or revise, or perhaps even to re-read". On the basis of the analysis of the work's contents, the present writer has arrived at exactly the same view of Varro as a scholar.



purpose. The answer seems straightforward. Quite simply, this was Varro's normal method of working. The desire to arrange a subject systematically was deeply rooted in him, and he followed it no matter what the subject. The almost feverish haste with which he applied himself to nearly every subject within ancient science left him no time to give the finishing touches to each separate work, neither to the form nor the contents; moreover, his reading could not always be thorough. Varro's methods in the work examined here reveal him as a writer of somewhat superficial habits, according to modern standards. Of course, one cannot judge the value of Varro's collected writings on the basis of his method for dealing with farming, particularly if the agricultural treatise is regarded as a purposely brief textbook. Münzer sets Varro's "Plauderei über die Landwirtschaft" up against his "streng wissenschaftliche Werke" [12], of which, of course, only a few books of the *De Lingua Latina* are preserved. Modern research into Varro has concentrated particularly on these during recent years. It is not my intention here to enter into the modern debate; the intention is merely to point out a number of striking similarities in method, which will show that several characteristics of the treatment of agriculture are to be found elsewhere in Varro's writings. In this connection a comparison with the science of etymology is particularly fruitful. This is, as we know, to be found in *De Lingua Latina* V–VII. Books V and VI form a whole, enumerating the etymologies of a number of words, grouped according to *locus*, *corpus*, *tempus* and *actio*. Book V comprises "loca et quae in his sunt", i. e. *corpora*; Book VI deals with "vocabula temporum et earum rerum, quae in agendo fiunt", i. e. *actio*. The procedure for each of these groups is to point out the etymologies of the most important words. Thus, the word "locus" is explained and then divided up into "terra" and "caelum", which are in turn explained and divided, etc. Examples from literature or antiquities are often added to the etymological explanations. Naturally, this analytic presentation is not exhaustive, as in that case it would have to explain all Latin words. The "vocabula" dealt with are best considered as typical examples, illustrative of the science of etymology.

In his treatise "Varro und die hellenistische Sprachtheorie" [13], Dahlmann has proved that the main division of this work corresponds to the stoic cosmology, and consequently he assumes that the main source is a stoic *etymologikon*, possibly translated by Aelius Stilo, but supplemented by Varro with numerous explanations of specific Roman-antiquarian *vocabula*. The original stoic-philosophical manual has thus become a grammatical and antiquarian one [14].

In Book VII we again meet the compositional scheme comprising four divisions, now applied to poetic vocabulary. Dahlmann assumes that as the basis of the book, Varro has made use of existing lists of words from commentaries on the

12. Cf. note 5.

13. 1932, zweite unveränderte Auflage (Berlin 1964).

14. This conception is for the most part shared by Collart, who emphasizes, however, that the source problem of the *De Lingua Latina* must always be solved subjectively; see Varron, *Grammairien Latin* (Paris 1954), pp. 45 sqq.

poets, and has not himself excerpted the examples: "sonst hätte er das Material in einer seinem Schema gemässeren Form zusammenzustellen versucht" [15]. In this book the material is badly suited to the form applied, but nevertheless, it has been forced into the mould just as is the case with our treatise. There are many indications that Dahlmann is right in assuming that such lists of words were used as sources, but there is no proof. As for the fourfold division, Dahlmann adds a cautious note: "in den res hum. war eine ähnliche Anordnung befolgt, vergl. August. CD VI, 3 . . . Wir können nicht genau sagen, wie weit Varro auch hier stoisch gegliedert hat und stoisch beeinflusst war" [16]. Thanks to Dahlmann's later penetrating studies of Varro, the same scheme of composition has been recognized in several of Varro's writings, the examples being quoted in his treatise on the *De Descriptionibus* [17]. To facilitate matters, these examples are repeated here:

The Satire "Nescis quid vesper serus vehar" (cf. Gellius 13, 3):

homunculi	locus	tempus	apparatus
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εἰσαγωγικός *ad Pompejum* (Gellius 14, 7); repeated in "*Epistula ad Oppianum*":

per quos senatus haberi solet de locis	quando	de rebus
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Epistula ad Marullum (Nonius 545, 15):

locus	tempus	adventus
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Antiquitates rerum divinarum (Augustine, C. D. VI, 3):

qui (scl. sacra) exhibeant	ubi exhibeant	quando exhibeant	quid exhibeant
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Antiquitates rerum humanarum (Augustine, ibid.):

de hominibus	de locis	de temporibus	de rebus
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De Lingua Latina V and VI:

loca et quae in his sunt =	corpus	vocabula temporum et	earum rerum quae in agendo fiunt = actio
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De Lingua Latina VII:

de locis	quae in locis sunt	de temporibus	quae cum temporibus sunt conjuncta
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De Descriptionibus (cf. Dahlmann op. cit.)

De Re Rustica, Scrofa's discourse (Chap. 5):

cognitio fundi (locus)	quae opus sunt colendi causa (corpus)	quae sunt facienda (actio)	quo tempore (tempus)
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15. Op. cit. p. 48.

16. Ibid. p. 36, note 4.

17. Studien zu Varro "De Poetis", pp. 121 sqq., Zu Varros Schrift "De Descriptionibus". See also Entretiens, pp. 8 sqq. which refers to Gernot Bühring's unprinted dissertation: Untersuchungen zur Anwendung, Bedeutung und Vorgeschichte der Stoischen numeri officii (Hamburg 1960), which unfortunately has not been accessible to me.

To this Dahlmann adds: "Dies quadrifariam dispertire liesse sich im varronischen Schrifttum zweifellos noch vielfach nachweisen, wenn die Bruchstücke einen genaueren Überblick gestatteten" [18]. This establishes the fact that a scheme of this kind is typical of Varro himself, a sort of model for the treatment of a variety of subjects—no matter what their nature. Consequently, the similarity between *De Lingua Latina* V and VI and stoic cosmology is not decisive for the solution of the problem of Varro's sources in his treatment of etymology. We must rather try to understand the composition as arising from the tradition of the schools of rhetoric formed by the Stoics. It is probably the *progymnasma ἔκφρασις*/descriptio of that school, practised through numerous drills in writing and declamation [19]. The study of the history of the *progymnasmata* is not yet so well advanced as to make it possible to date their origin with certainty, but in Varro's youth they were, no doubt, already organized along very strict lines [20], and in his manhood and old age he seems repeatedly to revert to some compositional scheme drilled into him in his youth as a framework for his writings. Thus, when looking for the background to Varro's somewhat artificially constructed arrangement of his material, we must look to the tradition of the schools. Although, as we know, letting a written composition reflect the strict rules of the school was not really considered a thing to be done, Varro did not take the trouble to vary these rules greatly. His great industry as a writer was concerned with the contents, not the form. However, just because he fits everything into the same mould, incongruities do arise also in factual descriptions, but Varro's encyclopedic interests left him no time to arrange his immense knowledge in different ways according to the individual subject [21].

18. Ibid. p. 123. Cf. *Entretiens* p. 9 sq.

19. Although Dahlmann himself produces evidence of this by means of quotations both from Theon and other rhetoric theorists, and finds traces of the outline already in Cicero (*De Oratore*, II, 53 and 63), he does not seem to have drawn in full the obvious conclusion that the present writer has felt obliged to accept.

20. See Kroll, *RE Suppl.* 7, coll. 1118 sq. (article on Rhetorik), and H. I. Marrou: *Histoire de l'éducation dans l'antiquité*, (Paris 1948) index s. v. "Progymnasmata".

21. It should be remembered, however, that this discrepancy between the plan of the fourfold classification and the subject which has been forced to fit into it, was probably not felt by Varro to be a discrepancy. He says (I, 1, 11) that he will follow the "naturales divisiones". With this may be compared *De Lingua Latina* V, 11: "Quadripertitio magis sic apparebit: corpus est ut cursor, locus stadium qua currit, tempus hora qua currit, actio cursio. Quare fit, ut ideo fere omnia sint quadripertita ..." Elsewhere (*De L. L.* VII, 5) he admits, however, that the fourfold division may have its difficulties: "... et si quid excedit ex hac quadripertitione, tamen in ea ut comprehendam (sc. dicam)". Cf. *De L. L.* IX, 31 sq., in which the fourfold division is traced back to "Graeci", whereas in the first-mentioned place in *De L. L.* above it is connected with Pythagoras, although there is a lacuna which would have explained how this result was arrived at from Pythagoras' dualism. That Varro was himself attracted by the Pythagorean school we know from a notice in Pliny (*Nat. Hist.* XXXV, 160), in which we are told that at his own request he was buried according to its ritual. It may not be necessary, however, to reflect too much on Varro's mystical interpretation of numbers, if any.

Book I of the agricultural treatise is a striking case in point. Apart from the fourfold division, we find another system used by Stolo in his discourse where there is a division into six steps (*gradus*). This system recurs in many other of Varro's writings, the latest list of examples being made by Robert Schröter [22]. Although we can hardly talk here about Beleg for the use of the word *gradus* as a proper term in a schematic outline, such as it is in fact used in Stolo's discourse, it is, nevertheless, a division which occurs in Varro with such comparative frequency as to allow us to call it typical. Thus, as far as Varro's schematization and exemplification are concerned, we must consider the treatise under examination to be normative of his general method of working. As far as his philological method is concerned, the very fact that it is used in the treatise on agriculture is proof that it is typical of him, since, of course, it was not created for the purpose of our treatise. On the other hand, the question of Varro's relationship to his sources, the scientific literature, is a difficult one, as we have no knowledge of them. It is important to establish here that the results of this study of his book on farming should become normative of our understanding of the entire Varroian corpus. The difficulty appears clearly from the fact that the whole of Varro's description of analogy/anomaly can be read with such essentially different interpretations as is the case with Detlev Fehling and Dahlmann's school [23]. The connection indicated here with other aspects of Varro's methods strongly suggests, however, that Varro was in general a hasty reader, as he was also a hurried writer.

There is nothing particularly extraordinary in maintaining that a writer who in his seventy-seventh year can say that he has written 490 books, has worked at some speed. The above remark dates from a couple of years before our treatise was written, and we know that Varro went on writing till he died. In all probability, Hieronymus' catalogue mentioned 490 books, and he says that this was about half the total number [24]. We must imagine the learned Roman dictating one book after the other with incredible speed. This might even have been reasonably comprehensible had he been—as has so often been maintained—a primarily bookish person; but, as we know, he was also an active politician, army officer and the manager of a considerable fortune. However, the word bookish

If the Stoics conceived the cosmos as one unity, all its different forms of existence could also conveniently be described according to the same outline; cf. Johnny Christensen: *An Essay on the Unity of Stoic Philosophy* (Copenhagen 1962). If so, this is the reason why Dahlmann finds a correspondence with stoic thought. Only, it is not a matter of a stoic "source", but of the entire stoic background in which the majority of ancient science had its origin.

22. Studien zur Varronischen Etymologie (1959), p. 7.

23. Fehling op. cit. For the discussion arising from this see J. Collart's survey, *Lustrum* 1964/9, pp. 237 sq.

24. Gellius III, 10, 17, in an account of Varro's introduction to the *Hebdomades*: "tum ibi addit se quoque jam duodecimam annorum hebdomadam ingressum esse et ad eum diem septuaginta hebdomadas librorum conscripsisse". For the discussion of this passage, see Dahlmann, *RE Suppl.* 6, coll. 1181 sqq.

has become a cliché which is applied to Varro quite indiscriminately in and out of season, but if we look at his life, it will become clear that not until he had reached an advanced age did he withdraw from politics, and even as an old man he had to flee to save his life during the proscriptions of the Triumvirate. The reorganization of his finances alone must have demanded considerable efficiency and effort. The term “bookish” is applicable to very few Romans, and a brief synopsis of Varro’s career will prove that he is no exception.

The classic work on Varro’s life is Cichorius’ treatise in “*Römische Studien*” of 1920 [25]. The history of his family is obscure, and although his career is not very well attested, we do know the following points:

Varro was born in 116, probably in the Sabine town of Reate. About 100/99 he began his military career, and sometime during the next ten years he was *IIIvir capitalis*. Not until 86, and in fact more probably in the following year, was he made quaestor, and thus became a senator. Not much later than that he made the customary visit to Athens to study there. In 78/77 he seems to have taken part in C. Cosconius’ Dalmatian campaign, and from 76/75 he was legatus under Pompey in Spain. However, the coin bearing his name and the title of *proquaestor* does not seem to date from that period, and cannot, therefore, apply to him [26]. He held the offices of tribune and praetor [27] before becoming, in 67, legatus pro praetore under Pompey during the war against the pirates, in which he became the first Roman to win a *corona rostrata* for valour. Cichorius elegantly combines the satire Sesculixes with Varro’s absence of about thirty years from Rome on military service between 100 and 70; in this last year he puts his tribunate, while others place this stage of Varro’s career at an earlier date [28]. Normally, the intervals between the stages of a public career were not so long, but it cannot be denied that the continuous warfare of these decades may have caused some exceptional situations of this kind. Cichorius, however, disputes Varro’s participation in the third war with Mithridates under Pompey. He can prove that our source for this information, Solinus, has copied the elder Pliny and, on his own account, added the words “*commilito ejus*” (i. e. Pompey’s) [29]. This is undoubtedly correct. Solinus is useless as proof of Varro’s participation, but also as proof of the opposite. Hence, Cichorius’ arguments

25. *Historische Studien zu Varro*, 1–3, pp. 189–241.

26. This coin, accepted as a source for our Varro’s biography by Cichorius (op. cit. p. 193), Dahlmann (RE Suppl. 6, col. 1175), and Della Corte (op. cit. p. 58), is by most numismatists dated to the year 49; see Grueber: *Coins of the Roman Republic II*, p. 362. As it has the inscription “*Varro proqu. Magn. procos.*”, it must have been minted by a different Varro, if the late dating is maintained.

27. Della Corte would like to place the office of praetor in 66 (op. cit. pp. 76 sqq.), whereas Broughton: *The Magistrates of the Roman Republic*, vol. II, p. 466, emphasizes that we do not know the year, but that it is more likely to be considerably earlier, “soon after 76”.

28. See Broughton, op. cit. p. 473.

29. Op. cit. pp. 194 sqq. He is followed by Dahlmann, RE Suppl. 6, col. 1176, and Della Corte, op. cit. p. 76.

are solely “e silentio” [30]. Unfortunately, we know very little of the relations between Pompey’s army against the pirates and his army against Mithridates. He is generally supposed to have had at his disposal in the latter war both his own previous army and that of Lucullus [31]. Consequently, it is extremely likely that Varro did, in fact, take part in this war, and only returned home with Pompey in 62. We then, in 59, find him as a member of Caesar’s commission for the assignment of land grants to veterans in Campania. Ten years later he is again *legatus pro praetore* in Spain, where, together with Afranius and Petreius, he fights in vain against Caesar. It is not certain when Varro assumed this office. As we know, Pompey took over the two Spains as provinces during his second term as consul in 55, but governed them through *legati* during the following years, when he himself preferred to stay in Rome. Vellejus tells us (II, 48,1) that the *legati* were Afranius and Petreius, whereas Caesar (B. C. I, 38) briefly notes that Afranius, Petreius and Varro each held (“*obtinebat*”) a part of Spain in 49. Either Vellejus has overlooked the fact that Spain was governed by three *legati* from 55, and not two, which is easily understandable, the usual number of pro-magistrates in the Iberian peninsula being two, or we must assume an administrative change, of which we know nothing, to have taken place between 55 and 49, by which Varro was given command of part of the army. The first explanation may be the most probable [32], but the second cannot be entirely disregarded. The fact that Varro went to Spain some time before the outbreak of the Civil War also appears from Cicero’s letter to Dolabella (Ad. Fam. IX, 13,1). After surrendering his troops to the victorious Caesar, Varro, like Cicero, stayed at Durrachium until he was reconciled with Caesar, who appointed him to take charge of that library the completion of which he himself was never to see [33]. It is somewhat surprising that Dahlmann can characterize a man with this career as follows: “Er war im Grunde eine durchaus unpolitische Natur, ganz anders als Cicero, hatte jahrelang seine Kraft der *res publica* zur Verfügung gestellt, nicht aus Freude an der Sache, sondern weil er als Gefolgsmann des Pompejus seine Pflicht als Römer dem Staate gegenüber zu erfüllen glaubte” [34]. If one did not know that Varro was such a prolific writer, one might describe his career as a typically military one—an excellent career

30. An important argument seems to be that Varro, in his account of the places in which domestic animals live in a wild state, does not mention that the wild donkey is found in the very regions where the third war against Mithridates was fought. The reason is, of course, that Varro never saw these regions himself! Considering that in this place (II, 1, 5) we have typical Varronian exemplifications, it is clear that we cannot expect any consistency and that, consequently, we cannot use this argument.
31. Plutarch, *Pompeius* Chap. 31; Appian, *Mithridates* Chap. 97. Cf. also Rice Holmes, *The Roman Republic*, vol. I, pp. 201 sqq.; H. H. Scullard, *From the Gracchi to Nero* (Praeger Paperbacks 1959), p. 100, and Broughton, *op. cit.* p. 156.
32. Thus, Ed. Meyer: *Caesars Monarchie und das Principat des Pompejus* (Berlin 1918), p. 176; Broughton, *op. cit.* p. 253: “Probably a legate of Pompey in Spain before 49”.
33. See also pp. 122 sqq.
34. RE Suppl. 6, coll. 1176 sq.

for a strategist of perhaps not first-class capacity, but at least he came in a good second. But Varro was a scholar, and consequently not a practical man. This basic view seems to be behind Dahlmann's interpretation of Varro's last service in the military field: "die Caesar im bel. civ. I, 38 und besonderes II, 17–20 mit einer gewissen überlegenen Ironie beschrieben hat, indem er das bedächtige Überlegen, Zweifeln, unzeitige Reden und zu späte Handeln des alten Mannes, der sich für die verlorene Sache seines Freundes einsetzt, charakterisiert" [35]. If we look at the episode in question in a different light, as does e. g. Rice Holmes [36], Varro appears as a man who tries to put his money on the most likely winner of the moment—a cunning policy in the circumstances. His political and military career is ample evidence of his adherence to Pompey. Even though we have no definite proof of his participation in all of Pompey's campaigns, it seems clear that in a number of crises he sided with the man who seemed the best defender of the Roman Republic that was to become one of the most cherished objects of his research. Such a man can hardly be described as apolitical; in fact, among his contemporaries were men who did not covet a political career, e. g. Atticus and Matius, of whom the former was a close friend of Varro's. Had Varro followed his example, he might rightly have been called an apolitical scholar, although Atticus probably did play an important political part as a mediator and intermediary among political groups. However, Varro's acceptance of Pompey was not entirely unqualified. We know that, probably in 59, he published a pamphlet against the Triumvirate entitled *τρικάρανος*, the three-headed monster. Unfortunately, we have no knowledge of his controversial work apart from what we can glean from a notice in Appian [37], but the title is in itself sufficient evidence of the contents. It cannot, however, have caused any break between Varro and Pompey, as during most of 59 and 58 Cicero through Atticus, tries to win over Varro to make him use his influence with Pompey [38]. Varro does not seem particularly anxious to side actively with Cicero, as the latter is very impatient and irritated by his reluctance. Eventually, Varro does seem to have actively advocated Cicero's return from exile, and during these years he must also have had some contact with Caesar. Only after Caesar's final victory do we have a number of letters from Cicero to Varro, showing Cicero's respect and admiration for the latter [39], who now seems entirely absorbed in his studies. Dating from the same period is also Cicero's dedication of the *Academici libri quattuor* with the well-known panegyric of Varro's scholarship, but from letters written to Atticus during the same period

35. Ibid. col. 1177.

36. Op cit. vol. III, pp. 74 sqq.

37. *Bellum Civile*, II, 9. It has been doubted, however, whether the writer is identical with our Varro, cf. Strassburger: *Caesars Eintritt in die Geschichte* (Munich 1938) p. 37, and Dahlmann, *Gnomon* 1955, p. 179 sq., who appears to accept the identification, however.

38. See e. g. *Ad Atticum* II, 20, 1; 21, 6; 22, 4; 25, 1. For a slightly different interpretation of the events, see R. Rowland, *Historia* vol. XV, 1966, pp. 222 sqq.

39. *Ad Fam.* IX, 1–8.

we know the effort this dedication cost him [40]; indeed, Cicero does not seem to have liked Varro much [41]. We must also consider as political contributions from Varro's pen the writings in which he praises Pompey directly or manages to insert his achievements. Münzer has rightly pointed out a conspicuous predilection for Pompey's achievements in Pliny's *Natural History*, which he convincingly attributes to this writer's use of Varro [42]. The question is, however, whether several of the later writings did not also have a political bias. Thanks to Heisterhagen's and Dahlmann's studies of the few *Logistorici* of which we do possess some knowledge, considerable light has been shed on this genre [43]. They seem to be a matter of short dialogues, each bearing the name of one of Varro's friends who had recently died. The latest, "Atticus de Numeris", must thus have been written shortly after Atticus' death in 32. All the names appearing in the titles are those of well-known Republicans. Whatever the contents of these dialogues, this ancient genre demands a presentation of the participants, and this assembly of former followers of Pompey must surely have had the effect of an indirect panegyric on the Roman Republic, which had foundered on the rocks of Caesar's dictatorship. Moreover, Varro may have been connected through Atticus with one of the circles closest to Octavianus during the difficult years of the Triumvirate, Marcus Agrippa's first wife being Pomponia, Atticus' daughter. His political influence may thus have been considerable, not only through his contribution to the creation of the myth of the happy Republican Rome, which in a way was realized under the principate, but also through his close ties with the men who were later to form the Imperial court.

Yet another fact confirms that Varro's military career was of much greater importance than has been generally acknowledged hitherto, viz. his great wealth later on his life, although he seems to have spent his childhood and youth in rather modest circumstances. In a letter, D. Brutus refers to his riches with the words "thensauri Varronis" [44], and there can be no doubt that large sums were invested in his estates. His farm at Casinum had a luxurious aviary [45] and a library. Probably his wealth featured prominently in the Triumvires' decision to proscribe him, just as the villa at Casinum had tempted M. Antonius at an earlier date. Riches of such dimensions as here seem to be the case, will in those days have originated from booty, and we are quite well-informed of Pompey's generosity to his officers—particularly after the war with Mithridates [46]. There is every reason to assume that Varro too belonged to the group of senatorial officers that grew immensely rich in this manner.

40. See Tyrrell and Purser's excellent note (*The Correspondence of Cicero*, vol. V, XIX, 3).

41. *Ibid.* vol. IV, LXVI sqq., in which the relationship between Varro and Cicero is described with great sympathy and understanding. For Della Corte's interpretation (*op. cit.* pp. 97 sqq.), see Dahlmann's severe criticism in *Gnomon* 1955, p. 180.

42. *Op. cit.* pp. 280 sqq.

43. *Varronische Studien zu den Logistorici* I (1957) and II (1959).

44. Cicero, *Ad Fam.* XI, 10, 5.

45. Cf. Chap. I, note 24.

46. After the victories over the pirates and Mithridates, the sum of 25 m. denarii was

If we compare Varro's life with the working habits we have been able to establish on the basis of our examination of Book I of the *Res Rusticae*, and of which we have found parallels in a number of other writings, we find Varro to be, not a scholar according to present-day standards, but an amateur, in the best sense of the word. When he was middle-aged and the consulate was no longer within his reach, he threw himself into his studies, which led to his voluminous writings. Everything seems to indicate that Cichorius is right in placing his Menippean Satires in the military period of his life, whereas the greater part of his more technical works undoubtedly belong to a later period. However, we should, doubtless, imagine him as an avid reader all through his life. We know a good deal about the intellectual life in the army, particularly in the winter camps. Thus, during Caesar's campaign in Gaul it was at one time the fashion to write tragedies [47], and Caesar himself wrote several of his works there [48]. Nor can there be any doubt that much reading was done, although the lack of proper libraries has, of course, been discernible. Even on the basis of extensive reading and excerpting in his early life, Varro's many-sided and enormous production during the latter half of his life, when new literature must have been included, is amazing. However, a comparison with Cicero's extensive philosophical production from February 45 to November 44 proves that Varro's was not an isolated case. Whereas Cicero returned to the political stage to meet his death there, Varro, his senior by ten years, could continue—probably at an unaltered rate of speed—till his death, pen in hand, or, perhaps more likely, scribe at hand, dictating till the end [49].

distributed among the legati and quaestores (Pliny, *Nat. Hist.* XXXVII, 16). For the whole problem see Maria Jaczynowska: *The Economic Differentiation of the Roman Nobility at the End of the Republic*, *Historia* vol. XI, 1962, pp. 488 sqq.

47. Cicero *epist. ad Quintum Fratrem* III, 5, 7, cf. II, 15.

48. I shall not here discuss the controversial question of the date of the writing of Caesar's *Commentarii*, but I refer the reader to Suetonius' observations on the other writings (*Divus Julius*, Chap. 56).

49. In an article (*Revue des études latines*, vol. 34, 1956, pp. 132 sqq.), Herescu disputes the view, generally accepted since Norden (*op. cit.* pp. 953 sqq.), that the ancient writers dictated their works. Supported by numerous examples, he maintains that the working procedure was "notare"—"formare"—"dictare", and that many writers wrote their manuscript with their own hand. This is, no doubt, true, but, of course, the second part of the process, arrangement and selection of the material, will have varied greatly from one writer to the next, and there need not be any likeness between a Horace and a Varro when they plan an epode and a book of *De R. R.*, respectively. Apart from that, Herescu's three stages correspond quite well with the procedure assumed here; cf. p. 115.

VII

THE ROMAN SCHOLAR

Although the present Studies on a number of points have endeavoured to substantiate a somewhat different view of Varro as a scholar from that usually given, the picture painted in the preceding chapter cannot by any means be said to be new. In 1931 Dahlmann published his article, "Der römische Gelehrte", in which he described Varro as a *dilettante* [1]. This article can to some extent be considered a declaration of intent for those fruitful studies of Varro in which Dahlmann has been the moving spirit ever since. It was to be desired, however, that the amateurism of Varro's method of working should be continually stressed [2]. This does not alter the fact, of course, that Varro was the most eminent representative of Roman scholars. Of this we have so much evidence that it is beyond doubt. The only trouble is that our opportunities for comparison are so limited, because the great majority of Roman learned literature is lost.

To the uninitiated, the title "the most learned of all Romans" might appear meagre praise, but if, with H. Bardon as our cicerone [3], we go through the numerous testimonia for Roman authors, otherwise unknown to us, who have dealt with learned subjects, we understand that Varro was indeed the most learned among many. Besides, "doctus" is not a word which is used extravagantly; the persons thus characterized in Cicero's extensive writings are certainly not numerous, and Cicero is nothing but ironic when on rare occasions he refers to himself as learned [4]. On this point we cannot accuse him of a lack of modesty.

The purpose here is not to give an extensive semantic explanation of what the word "doctus" covers. It has many facets, and, as we know, it is applied both to the old, classical writers, especially the philosophers, and to those who are engaged in scientific work proper. Furthermore, the late Republican and

1. Das humanistische Gymnasium (1931), pp. 185 sqq.
2. E. Laughton underlines this in his review of Entretiens; see The Classical Review, 1965, p. 64: "... Dahlmann is able to assign a number of Varronian observations on the early Roman poets to their probable place in the introduction to the De Poetis. Nothing could be more convincing, if only Varro had possessed as tidy a mind as Dahlmann. Unfortunately, as the extant writings make all too evident, Varro's mind did not work in this way. He cannot be relied upon either to maintain a scheme, even when he has himself announced it, or to confine his remarks on a given subject to the work or works to which we might expect them to belong."
3. La Littérature Latine Inconnue (Paris 1952), esp. Chap. 7, "Autour de Varron" (pp. 291 sqq.).
4. See e. g. Epist. Ad Fam. 9, 20, 3; 12, 17, 2.

Augustan poets were fond of applying the adjective to themselves. Common to all the persons so called is that in one way or other they have learnt, or achieved by study, their particular insight. Of special interest for us is to examine the methods according to which the Roman scholars studied. At a time when discussions about method often threaten to override scientific work proper, this would be an obvious problem to tackle.

Naturally, a prerequisite for study was a comprehensive library. To a Roman in the days of the Republic this meant a private library, as a public library was only established by Caesar as dictator. From his correspondence we know the zeal with which Cicero added to his collection of books. Lucullus, who can hardly be described as learned in the proper sense, had an immense library [5], and Varro's collection was also considerable, as was to be expected [6]. As previously mentioned, the ancient papyrus roll was not very suitable for purposes of reference and verification, and there can be no doubt that the practice of excerpting was widely used. Already in an early work, the *De Inventione* (II, 4), Cicero mentions this practice: he maintains that he has excerpted the best from all writers, and now passes on the cream. This would be the normal method of working for the careful reader. Thus, Plutarch tells us that on the day before the Battle of Pharsalus Brutus was working on an epitome of Polybius, and Suetonius relates that Augustus even excerpted directions and exempla "ad verbum", and sent them to such persons as might need them [7]. However, our most important source for the methods of the Roman scholar is the younger Pliny's description of his uncle; he excerpted everything he read, and said that no book was so bad that it could not be put to use somehow. He was always reading—even at meals, when he was being rubbed down and massaged after his bath, sitting in his litter in Rome, or during his travels. He was accompanied by a slave, a "notarius", who could take down what he dictated, and who in winter was provided with mittens against the cold [8]. And we must, without doubt, imagine Varro to have been equally industrious.

A problem not yet sufficiently considered is the way in which these countless excerpts were kept. If a person excerpts all that seems of interest to him as he reads, and gradually makes his notes directly on a papyrus roll, it goes without saying that his collection of notes will soon become as unhandy for practical reference as the original books. From Pliny's description we learn that the "notarius" who accompanied his uncle carried both the book and the small tablets,

5. See the delightful description in *De Fin.* III, 7 sq., where Cicero comes to borrow books and finds Cato "in bibliotheca sedentem, multis circumfusus Stoicorum libris".
6. His villa at Casinum had a "museum" (III, 5, 9); cf. the description in *Philippica* II, 103 sqq., and *Gellius* III, 10, 17.
7. *Divus Augustus* Chap. 89, 2; *Plutarch, Brutus* Chap. 4; cf. *Cic. Ad Atticum* 12, 5 and 13, 8, in which are mentioned Brutus' epitomes of Fannius and Caelius, apparently used by Cicero. For Brutus' philosophical writings see Bardon, *op. cit.* pp. 209 sq.
8. *Epist.* III, 5. For the ancient book see Th. Birt: *Das antike Buchwesen in seinem Verhältniss zur Litteratur* (1882), and C. H. Robert's article: *The Codex* (*Proceedings of The British Academy*, vol. XL, 1954, pp. 169 sqq.).

“pugillares”, on which the excerpts were written. The most usual procedure will have been for a slave to read aloud to the elder Pliny, who will then have made notes himself during the reading, or dictated the passages he wanted excerpted. Later, the excerpts will have been transferred to *volumina*. In the same letter the younger Pliny says that he inherited 160 rolls covered with writing on both sides, and that his uncle had told him he had been offered HS 400,000 for these notes several years before, when they were considerably less extensive [9].

It seems to be clear that if such collections were worth such large sums of money to a stranger, the excerpts must have been arranged according to some system, enabling the person using them to do so without too much difficulty. This systematization can only have been done at the same time as the transferring of the excerpts from tablet to roll. In all probability, the tablets covered with excerpts were not filed, as they would have taken up too much space. More likely, the excerpts will have been concurrently transferred, with the result that they can have been sorted along very broad lines only. Thus, all the excerpts pertaining to the same subject can hardly have been collected on one roll, unless we imagine a system by which the contents of the *pugillares*, after being sorted, were transferred to special rolls—one roll to each subject—which were then gradually filled with excerpts on the separate subjects. This system would demand reliable secretarial assistance and is by no means inconceivable—it is just that we have no evidence of it [10].

An excellent example of a writer who made no attempt at systematizing his notes and excerpts is Aulus Gellius. In the preface to his *Noctes Atticae* he himself tells us about his procedure; every time he read a Greek or Latin book he made notes, every time he heard something of interest he wrote it down at once, so that he could easily find it. The order he used for the individual essays (*commentarii*) of the collection is the order of the original notes (*adnotationes*), which we may thus suppose him to have written directly on to a papyrus roll from the start.

If we look at the resulting strange mixture, we get the impression of disparate reading, and as the order of the chapters is identical with that of the excerpts, we must ask whether it has really been so easy for him to find his way through these “*adnotationes*”. After the preface come the “*capita rerum*”, a brief synopsis of the individual essays in each book, so that the reader may the more

9. Birt (*op. cit.* p. 355) wrongly assumes that this is a matter of finished manuscripts, and that the price stated is the author's fee, of about HS 2,500 per book. Nor is Birt's second example of an “author's fee” correct. The account in Suetonius (*De Illustribus Grammaticis*, Chap. 8) also concerns the sale of a manuscript which the buyer would use personally. Otherwise it does not make sense that Orbilius bought it back and had it published “*nomine auctoris*”.

10. As a rule these secretaries must have been slaves. Our knowledge of “*servi litterati*” or “*amanuenses*” is not great. The most important literature on this subject has been gathered by C. A. Forbes: *The Education and Training of Slaves in Antiquity* (*Transactions and Proceedings of the Am. Phil. Ass.*, vol. 86, 1955, pp. 321 sqq., esp. 337 sqq.). For secretarial assistance to Cicero's son see also p. 108 sq.

easily find the subject he is looking for [11]. Whether the original “adnotationes” were supplied with a similar, if shorter, index, we cannot tell; Gellius’ own words seem to indicate that they were not. Elsewhere (XVII, 21) we are given a brief description of eminent Greeks and Romans who lived at the same time, and Gellius says here that he originally excerpted the material from the books that are called “chronici”, and has now hastily arranged these scattered excerpts, leaving out some of the material, as he considers a small part of it sufficient for this “commentarius”. His “adnotationes” are here called “excerptiones variis diversisque in locis factae”, and the word “commentarius” is again applied to the individual essay. The elder Pliny’s 160 rolls were also referred to with the words “electorum commentarii”, and we must therefore ask whether these “electa” are pure excerpts or rather, like Gellius’ work, miscellaneous observations on the material excerpted. This can hardly be settled with certainty, but everything suggests that the material left by Pliny was working material, not the finished product.

The genre cultivated by Gellius seems to have been very popular in Antiquity, and in the preface he mentions a number of possible titles for such collections. Some of these titles we meet again in the preface to Pliny’s Natural History, in which he too discusses the various possible titles for his work. All the same, the works of the two writers differ widely from one another in a number of ways, including their methods of quotation. Gellius almost always states the source of his quotation, whereas Pliny—according to modern standards—is much more careless. We may reasonably imagine his *commentarii* to have contained much more precise references, but these were omitted in the finished work in order to avoid burdening the description with unnecessary details [12]. We must, without doubt, take *commentarius* to mean two different things in the two writers; in Gellius the finished essay, in the younger Pliny the transcribed notes. Whether the latter contained his uncle’s own reflections on the matters excerpted, may depend on whether they were transferred to rolls by himself or by a secretary. In the latter case, we would doubtless find a more mechanical rendering of the contents of

11. Such indices are also to be found in Pliny’s Natural History, where we are told that Valerius Soranus was the first Roman to introduce this custom (praef. 33). Pliny’s words here might indicate that none of the intervening writers made indices, but Columella (XI, 3, 65) tells us that he will bring “argumenta omnium librorum meorum”. It is a moot point whether the index that follows is written by the author himself.
12. Pliny introduces each book with a list of the writers he has used. Whether these auctores really have been used is a problem I shall not discuss here. In the preface Pliny says on this subject (17): “viginti milia rerum dignarum cura . . . lectione voluminum circiter duum milium . . . ex exquisitis auctoribus centum inclusimus triginta sex voluminibus adjectis rebus plurimis quas aut ignoraverant priores aut postea invenerat vita”. Although no doubt rounded off, the numbers mentioned of books read are by no means inordinately high for a man who—as distinct from most modern scholars—must have mastered Latin and Greek to perfection. The numerous “res dignae cura” probably refer to separate excerpts. For Varro as Pliny’s source for his list of authors also, see Della Corte, op. cit. pp. 283 sqq.

the tablets containing the first notes. On the other hand, it seems quite evident that there has been some kind of systematization in the distribution of the notes to the various rolls, or they would have been almost entirely useless.

The systematic arrangement of excerpts appears most clearly from ancient lexicography, where separate words—often arranged alphabetically—are explained with examples from literature. The formation of such word lists presupposes a systematic arrangement of the excerpts written on tablets. Possibly here too we should imagine a *commentarius* in volume form as an intermediate link between excerpts and finished manuscript [13].

The systematic excerpting of books results in yet another characteristic of the ancients' use of literature, explained with his usual lucidity by Münzer, who refers to examples in Pliny's *Natural History* [14]. When a scholar had selected a subject for study, he would begin—just like to-day—by reading a fairly up-to-date standard work, which he would excerpt. Then he would read other works, of earlier, as well as more recent, origin; but gradually, as his reading proceeded, he would excerpt less and less, only making notes of what was new or different in the work studied. From this it follows that even if we can prove that quotations must have been taken from an intermediary source, this is not tantamount to a proof that the original writer has not been used. Thus, Pliny has a number of passages from Theophrastus at second hand, but other passages he must have taken directly from the writer's own works. Using a well-organised card-index system, the modern scholar can fairly easily keep his quotations in order, and verification of a reference in the original text can be made without undue trouble. The modern scholar can also find earlier literature and refer to it in a footnote. The form of the ancient book made any use of this procedure so extremely difficult that hardly any ancient writer will have even thought of applying it, and, being used to a lack of precision in quoting references, they were probably not bothered by it. Occasionally, Pliny can in fact be shown to have verified quotations he has come across [15].

We have no direct information about Varro's method of working, but in Chap. V I have tried to establish that a number of the characteristic features to be found in Varro's use of earlier literature are most easily explained by assuming that for the final composition of his treatise he has availed himself of excerpts. We must, no doubt, assume that these excerpts—like Pliny's—have been transferred from *pugillares* to papyrus rolls. The very fact that the excerpts have thus been transcribed twice involves an increased risk of the notes becoming disarranged, and of mistakes appearing in consequence. In one other point we may be able to find confirmation of what was in fact Varro's method. According to

13. The rhetoricians also used examples extracted from the classical speeches to illustrate their textbooks. An interesting discussion of the method used here is found in "Ad Herennium" (IV, 1–10, esp. 6 sq.), where it is maintained that excerpting ("eligere") is easy, and that part of this work can be done by "quavis mediocriter litteratus".

14. Op. cit. pp. 6 sq. and passim; cf. Chap. IV, note 11.

15. See Münzer, op. cit. pp. 12 sqq.

Hieronymus' catalogue, he published abbreviated editions of two of his works. The *De Lingua Latina* comprised 25 books, to which corresponded an "Epitome de Lingua Latina" in nine books; and the *Hebdomades* in 15 books was reduced to an "Epitome ex Hebdomadum libris" in four books. This abbreviation may have been done in one of two ways: either it must be a matter of an extract from the original, more comprehensive work, or else Varro has, on the basis of his notes and excerpts, co-ordinated a smaller selection of his material. In either case he must have used the method of excerpting and transcribing.

Naturally, the process of excerpting was not a Roman invention. The very closeness of the link between excerpt and glossarium takes us back to the Alexandrine philologists, who must have made extensive use of this method in their studies. If we consider a typical representative of the later Greek scholars, Plutarch, we find a number of remarkable similarities in working methods. As far as many-sided production is concerned, Plutarch is, no doubt, of the ancient writers we know, the one who has most traits in common with Varro, but he can much more justifiably be described as a professional scholar. Plutarch too indulges in quotations [16], some of which—particularly those from poetry—are doubtless written out from memory, while a great many others are probably taken from his excerpts. One of his works has been taken to be a collection of excerpts of this kind, viz. the "*Regum et Imperatorum Apophthegmata*", which has been regarded partly as an extract of the *Lives*, partly as a collection of quotations made by Plutarch for the *Lives*, in other words, a *commentarius* like Pliny's; this *commentarius* was then edited posthumously [17].

If we imagine Plutarch working according to the same methods as the Roman scholars previously mentioned, a reliable solution of the extremely difficult problems concerning the sources of his *Lives* will be impossible in principle. The characteristic switch from one quotation to another, which also marks Suetonius' biographies, will then become a switch from one source to another, and is no doubt due to the use of excerpts from widely differing authorities. Consequently, we must be sceptical towards over-confident demonstrations of a "main source", when it cannot be otherwise verified.

P. A. Stadter has arrived at a rather similar evaluation of Plutarch in his excellent critical analysis of the sources of the "*Mulierum Virtutes*" [18]. Here, Plutarch appears as the man extremely well versed in all the historical literature, who with exquisite taste has created a collection of little known anecdotes culled from a great variety of sources. The claim frequently made, that large parts of such material in Plutarch originate from anthologies on which he could draw directly, is thoroughly repudiated as far as this work is concerned, and thus appears to be less likely in other cases also. The great treasure of quotations con-

16. Collected and clearly arranged by Helmbold, O'Neil and Edward: *Plutarch's Quotations* (1959).

17. See Konrat Ziegler's article on *Plutarchos*, *RE* 21, 1951, coll. 226 sqq., published separately with the title: *Plutarchos von Chaironeia* (1964).

18. *Plutarch's Historical Methods*, 1965.

tained in Plutarch undoubtedly originates from the writer's own extensive reading, whether the individual quotation be made from memory or from a book of excerpts [19]. Certainly, Plutarch once complains of the limited opportunities for pursuing his studies at Chaeronea [20], but it is quite unwarrantable to conclude on the basis of this text, that his own collection of books was not considerable. After all, such self-effacing complaints are part of the scholar's life; indeed almost become a topos with many writers.

On one occasion Plutarch himself refers to his collection of material. In the "De Tranquillitate Animi" [21], dedicated to a friend who has asked his advice, Plutarch begins by apologizing for not having had the time to write more extensively, and goes on to say that he has only made a selection of the *ὑπομνήματα* he has made on the subject for his own use. So, these *ὑπομνήματα* then must correspond to Pliny's *commentarii*. This brings us to the current discussion about the precise meaning of these words, and their possible identity within ancient historiography. Without going into details, I must also touch briefly on this problem in connection with the present discussion, as it is very important for our comprehension of the methods employed by the ancient historians.

The starting point is Lucian's very short description of the historian's procedure [22]. He must first gather his facts (*συνάγειν τὰ πράγματα*), preferably by seeing for himself or by reading the least biased authors. He must then make a *ὑπόμνημα* without any rhetorical or stylistic embellishment. And last, but not least, comes the literary elaboration on the basis of the notes. To present-day historians it is somewhat astonishing that what for us represents the crucial part of our work, is disposed of in two small chapters in a treatise of considerable length. The identification of *ὑπόμνημα* with *commentarius* as a *terminus technicus* within historiography rests on Cicero's use of the two words. In 60 B. C. he asks Posidonius to write the history of his consulate, and to this end he writes an outline, or a collection of material, in Greek, which he first sends to Atticus in order that he may read it through (ad Att. I, 19,10). Later, he tells Atticus (ad Att. II, 1,2) that Posidonius has refused to work up the material sent to him, on the grounds that he finds its literary merits so high as not to necessitate further elaboration. In the first letter the material is called "commentarius Graece compositus", in the second *ὑπόμνημα*. We can hardly ask for a better identification of the two words. It is easy to understand why Posidonius declined to take on the delicate task, and there is no reason to doubt that Cicero, in his description of his famous year as consul, had been unable to con-

19. Carl Theander: Plutarch und die Geschichte (Lund 1951), has again discussed a number of Plutarch's own remarks about the method of working employed. The evaluation adopted here is deeply indebted to this work.

20. Demosthenes, Chap. 2; see also Theander's comments on this passage (op. cit. pp. 6 sq.).

21. II, 465 e. For the work in general, see Ziegler, op. cit. coll. 149 sq.

22. *Historia quomodo conscribenda sit*, Chap. 47–48. For the modern discussion of the work see Gert Avenarius: *Lukians Schrift zur Geschichtsschreibung* (Meisenheim 1956), for our problem esp. pp. 71 sqq.

fine himself to what Lucian understands by ὑπόμνημα. He constantly reverted, orally and in writing, to that “annus mirabilis”; he could adorn it with all manner of rhetorics, but setting out the bare facts was beyond him [23]. Moreover, we can establish the close relationship between *commentarius* and ὑπόμνημα in another connection. In 44 B. C. Cicero sends the three books *De Officiis* to his son, who is studying under Cratippus in Athens. At the end of the work (III, 121) Cicero asks his son to accept these books, “inter Cratippi *commentarios* tamquam hospites”. Probably from the same year is a letter from the son to Tiro (ad Fam. XVI, 21) asking him to send a “*librarius*”, preferably a Greek, to help him to transcribe his notes, which takes him too much time (par. 8: “*multum enim mihi eripitur operae in exscribendis hypomnematis*”). By “*hypomnemata*” he undoubtedly means the notes he makes on *pugillares* during lectures, whereas the “*commentarii*” mentioned by his father must be the transcribed notes. When a student of this kind can keep a secretary to do the job, a Roman gentleman-scholar must surely have been able to do the same when his excerpts had to be transcribed. It should be noted that the request is made as quite a trivial matter in the last lines of the letter.

For more than a generation Cicero's use of *commentarius*/ὑπόμνημα has been juxtaposed with the passage in Lucian, for the purpose of acquiring a clearer picture of what ancient politicians actually meant when they gave their “memoirs” these names. In Greek, the earliest example of this practice is Aratus of Sicyon, of whose ὑπομνήματα Polybius and Plutarch made frequent use, and in Latin we may point to a number of politicians from the second and first centuries B. C. who published autobiographical notes, the exact titles of which, however, we cannot establish with any certainty; but this has been of minor importance, since the principal students of this question have been the students of Caesar, anxious to use the juxtaposition to throw some light upon the genre chosen by Caesar for his famous *Commentarii* [24].

Franz Böhmer, especially, has refused to accept the identification of the Latin

23. Cf. Cicero's self-ironic remarks on the meeting in the Senate in February 61, and the speech he made on that occasion (Ad Att. I, 14, 3 sqq.). It should also be remembered that Atticus wrote a *commentarius* on Cicero's term as consul, but it was not received favourably by his friend; cf. Ad Att. II, 1, 1: “*quamquam tua illa—legi enim libenter—horridula mihi atque incompta visa sunt, sed tamen erant ornata hoc ipso, quod ornamenta neglexerant*”. Cornelius Nepos calls Atticus' *commentarius* “*liber Graece confectus de consulatu Ciceronis*” (Att. 18, 6). From Cicero's letter it appears with the greatest clarity that Cicero had been by no means chary of rhetorics in his description of the events; cf. the remarks on this in A. D. Leeman: *Orationis Ratio* (Amsterdam 1963), I, p. 168 sq. A slightly different understanding of the sending on of the manuscript to Posidonius is advanced by Hans Oppermann: *Caesar, der Schriftsteller und sein Werk* (Leipzig 1933), p. 4, and his interpretation has been adopted by Carsten Høeg: *Cicero* (Copenhagen 1942), who, (pp. 165 sq.) maintains that the manuscript is only sent to Posidonius to enable the master to praise it before publication. For Cicero's autobiographical works cf. also Gelzer, *RE* 2. Reihe, 7, 2, coll. 902 sq.

24. Hans Oppermann, *op. cit.* pp. 1 sqq.

word with the Greek, and he maintains that Cicero's *commentarius*/ὑπόμνημα has nothing to do with Lucian's directions for historians [25]. He bases this view on a very detailed examination of the meanings and uses of the two words in Latin and Greek. Let us look briefly at his thesis. The Roman "*commentarius liber*" is a book containing "*commenta*"; "*commentum*" is "*id quod comminiscitur*"; the word is known particularly in cultic and official language as a term for "*Amtsbücher*".

This is indubitably true, but considering what has been transmitted to us, there is nothing strange in the fact that we have evidence for the word in that sense. Such "*Amtsbücher*" were the very sources the Roman scholars used and quoted. Private collections of excerpts and notes were of no interest to the following generations, and, consequently, we find no reference to them. That the literary *commentarius* was closely related to the Roman official's "*Amtsbuch*" is, no doubt, quite correct, but this does not exclude the possibility that the purely private *commentarius* was equally common, probably even more so. Passages of Cato's *De Agri Cultura* [26] are the examples most clearly related to such a collection of notes, but also elsewhere within the agricultural literature we find indications hereof. In the book on animal husbandry, Varro makes one of the participants in the discussion say (II, 5, 18) that he sees that his herdsmen read "*exscripta de Magonis libris*" concerning cattle diseases (27); and the agricultural calendar dealt with above (Chap. IV) can also be considered a *commentarius* of this kind. In this connection I regard it as of minor importance that the term is not used of these private notes in the literature handed down to us. That they did contain "*commenta*" is quite evident [28].

Probably very similar to these private notes was Varro's "*commentarius εἰσαγωγικός*", which he wrote to Pompey just before the latter assumed the office of consul for the first time. Apparently, Bömer has some difficulty with this work because it cannot be regarded as a genuine "*Amtsbuch*", Varro having at no time been consul himself. The fact that Varro chose the form of a *commen-*

25. *Der Commentarius*, *Hermes* vol. 81, 1953, pp. 210 sqq., where references to all the relevant literature are to be found. An excellent discussion of the thesis is found in Gert Avenarius, *op. cit.* p. 85 note 36, and pp. 98 sqq.

26. For the literature on Cato see Chap. I, note 2.

27. Such notebooks on cattle diseases play an important part in Varro's Book II. They are mentioned generally in II, 1, 23; and then in the treatment of several animals; sheep (II, 2, 20); goats (II, 3, 8); cows (II, 5, 18); horses (II, 7, 16); herdsmen (II, 10, 10).

28. Instructive in this connection are the various titles given to the orator, Marcus Antonius' manual on rhetoric, which apparently was a private collection of notes that had been in circulation, and was suddenly "published" against the author's wishes. It is mentioned by various names by Cicero, e. g. *De Orat.* I, 94, *ibid.* 206 and III, 189 "*libellus*"; *De Orat.* I, 208 "*commentarius*". In the *Orator* (18) it is called "*liber*". In the *Brutus* (163) speaking about the form: "*ille de ratione dicendi sane exilis libellus*". The word "*exilis*" shows that it is a matter of a non-rhetorical work in the form of "*commenta*". That it was not the result of theoretical study but of practice, is seen from *De Orat.* I, 208, where Antonius says of the contents: "*non ... doctrina tradita, sed in rerum usu causisque tractata*".

tarius is explained as “ein hybrider Ausweg” [29]. A more obvious explanation is, of course, that this is not an “Amtsbuch”, but simply a book of rules to be observed by a consul. That it is indeed a book of a purely private nature is also proved by the fact that at one time it disappeared, so that Varro later had to reconstruct it. The work is thus pre-eminently a book containing “commenta”. According to my interpretation, the word “commentarius” covers various types of note-making, from the student’s notes at lectures to Caesar’s Gallic War. When the statesman chooses this title, we must probably see it as conscious coquetry or, more likely perhaps, a tendency. He wants to underline the fact that his *Commentarii* contain the written notes of events as they did in fact take place, without the rhetorical embellishment and moralizing remarks that can be found in historiography. Being a statesman, he is, of course, not without some personal interest in leaving for coming historians such source material as he himself thinks suitable. Naturally, Cicero wanted history to accept his version of the *annus mirabilis*, only he could not help indulging in rhetoric. That a similar tendency was discerned behind Caesar’s *Commentarii* at the time they were written, appears quite clearly from two contemporary observations, one made by Cicero in his characterization of the work in the “*Brutus*” (262), the other by Hirtius in the last book of the “*Bellum Gallicum*” (preface).

Furthermore, Bömer is only partly justified in his wish to emphasize so strongly that Cicero’s *commentarius*/ὁπόμνημα was not an outline or a draft in Lucian’s sense [30]. Lucian’s ὁπόμνημα was still a preliminary stage of the final work, without rhetorical finery. Such is not the case with Cicero’s. In my opinion, however, the decisive factor is that Cicero wants it, or p r e t e n d s to want it, to be larded with still more rhetorics, and, consequently, sends it to Posidonius, who politely declines the task. From this we must conclude that there must have been nothing unusual in first working out the historical raw material, in order to transform it into artistic prose later. That the raw material has, already, become artistic prose in Cicero’s case is, in this regard, of no consequence.

Moreover, we have other examples of the division of the work between a collector and an elaborator of historical material. Suetonius tells us of Atteius, the grammarian, that he made a “*breviarium omnium rerum Romanarum*”, from which Sallust could select what he wanted for his historical works [31]. Although the word “commentarius” is not used in this connection either, it appears to me pedantic to deny that we are here presented with the same prac-

29. Op. cit. p. 230 note 1. For the contents and fate of the work, see Gellius XIV, 7.

30. See esp. the account, op. cit. pp. 236 sq.

31. De Illustribus Grammaticis, Chap. 10. As Asinius Pollio, who, like Sallust, was a close friend of Atteius, is quoted in this brief biography, it seems reasonable in my opinion to assume that he is the original source of the tradition of this “*breviarium*”, which may have been mentioned “in libro, quo Sallustii scripta reprehendit”. We thus possess a first-class source for Sallust’s historical methods.

The same division of the work between the collector of the material and the writer of history is well supported by evidence from the Empire; see Oppermann, op. cit. p. 3, and Avenarius, op. cit. p. 98.

tice. The term "commentarius" thus covers widely different things, and new light can hardly be thrown on the genre in which Caesar consciously placed his works by studying their Latin title. For that purpose it is too vague.

For the meaning of the Greek word ὑπόμνημα I shall chiefly refer to Bömer, but I would like to draw attention to one sense, viz. "Dokument, Urkunde, Historiographische Quelle", supported by several places in Polybius, particularly from the great polemic against Timaios in that part of Book XII which has survived. Timaios is accused of being a bookish historian, immured in the libraries looking for ὑπομνήματα [32]—of course, with the purpose of copying them for incorporation in his own work. The whole polemic contrasts the bookish historian with the active historian, who travels about to collect and verify his material on the spot, as Polybius did by taking part in Aemilianus' campaigns. ὑπομνήματα are here not the excerpts qua excerpts, but the information worth culling from books for a bookish work. Clearly, there is only a difference in degree between these two meanings. ὑπομνήματα is not used by Polybius about collections of excerpts, but, as previously mentioned, Plutarch uses the word that way, and there is no reason to assume the word to have "changed its meaning". ὑπομνήματα are things reminding a person of something, and should consequently be remembered, possibly in a note book, which is referred to with the same word in a collective sense, and which can be a collection of excerpts as well as the final work or a stage in between. Apart from the collective sense, the word covers "Dokument", "Urkunde", and "Historiographische Quelle" that is written down. Thus, *commentarii* and ὑπομνήματα cannot be said to be identical in meaning. The Greek word has a much wider use, but in a great number of their senses the two words cover the same basic phenomenon, be it the student's notes, the historian's outline, or the scholar's transcribed notes and excerpts. In Lucian it need not be the collection of excerpts itself, it may be a synopsis or summary of it [33]. This is made by "weaving together" all that has been collected—or most of it—into a "σῶμα ἀκαλλές ἔτι καὶ ἀδιάφθωτον". The same words would, no doubt, describe Pliny's 160 rolls of *commentarii*.

On the basis of the terminological agreement alone, we can take it that the historians also used the same methods as the "learned" writers, i. e. they excerpted their predecessors, compared them, and included this material in their own work. The essential difference between the ancient historian and the specialist

32. Op. cit. p. 220. For the polemic against Timaios see esp. note 6; of special interest here among the passages from Polybius mentioned in the note are: XII, 25 e, 4; h, 5; i, 2; 27, 3; 4; 28 a, 3; 7.

33. As we know, Lucian's work was occasioned by various treatments of contemporary events, viz. the Parthian war 162–65. It was not, therefore, so much a matter of excerpting, but rather of collecting accounts from eyewitnesses and the like. In principle, however, the procedure is the same. A comparison between the problems of contemporary history and earlier history we find in a remark by the younger Pliny (Epist. V, 8, 12): "vetera (vic. adgrediar tempora) et scripta aliis? parata inquisitio, sed onerosa collatio. Intacta et nova? graves offensae, levis gratia". It seems as if Pliny found dealing with the earlier history the more difficult!

scholar is thus to be found, not in the method of approach, but in the genre in which they wrote, historiography being closely related to rhetoric and philosophy. Naturally, not all historians need to have followed precisely the same methods, but it is reasonable to suppose that the division codified by Lucian was nothing out of the ordinary. Although some historians—like Polybius—preferred the active collection of material of the more contemporary historians, a great many of them were learned library scholars. As far as Rome is concerned, we know that the historiography of the Republic, which is now lost to us, was mainly created by active politicians. During the Empire matters were different. One or two examples from among the later historians will serve to illustrate their learned approach, but I must point out that this will be no detailed examination, merely a few suggestions.

Titus Livius is probably to be considered one of the most widely condemned of ancient historians. For many years, scholars have been paying more regard to his mistakes than to the work itself. A fairer means of evaluation is to consider him, as P. G. Walsh does, within the limits of his own qualifications [34]. Once we realize the immense scope of the whole work, it becomes evident that we are faced with a very industrious writer. True enough, in the individual books he considers fewer sources than the ancient scholar, but he is never blindly tied to one single source. In most cases, the divergent opinion is added briefly at the end of an episode, and he seldom tries to arrive at a well-founded conclusion. His critical method differs here widely from that of the modern historian, and this is, of course, the reason why he has been so severely criticized.

It is interesting to see how he can have handled his raw material technically, but in this connection it must be emphasized that we have no direct information about his method. It is certain that the work was written and published by stages. Evidence of this is to be found in the prefaces to Books XXI and XXXI, in which he complains, no doubt with good cause, that the nearer he gets to his own time, the more overwhelming his task. Consequently, we should not imagine Livy to have gathered all his material in “commentarii” prior to the literary elaboration [35]. Considering the fact that the opinions of divergent sources are, as previously mentioned, most frequently added at the end of a description, it is justifiable to suppose that such opinions are marginal notes in a *commentarius*, in which now one source, now another, has been copied [36]. However, there are examples of the co-ordination of divergent sources, chiefly discernible in passages where Livy’s own text is self-contradictory. It has often been maintained that Livy has no insight into either topographical/geographical or military

34. Livy, *His Historical Aims and Methods* (Cambridge 1961).

35. In this Livy seems to differ from the previously mentioned writers. For Appian and Dio, see also pp. 114 sqq.

36. I share Laistner’s doubts that the historical account itself was finished before the “variations” were added; cf. *The Greater Roman Historians* (Paperback ed. 1963), pp. 83 sqq., and Walsh, *op. cit.* pp. 141 sqq. The possibility outlined here is, of course, only one among many.

matters, and that this lack of insight only underlines the bookish nature of his method of working, which must be assumed to have comprised a moderate degree of excerpting, and the comparison of rather few sources with a main source which changes several times within the same book. The possibility cannot be excluded, however, that the excerpts may have been added in the margin of the main source itself [37]. Perhaps this provides a better explanation for the fact that duplicates may occur simply because he has passed from one source to another. If so, his *commentarius* may have been a very brief extract of the main sources and their marginal notes that were to form the basis for the description of the individual episodes. A *commentarius* of this type differs widely from the type we have previously dealt with, and is much nearer to the brief summary of main points which an orator would make to support him during his speech. Cicero refers to this practice in the "Brutus" (164) with the words "capita rerum et orationis commentarius". We know that Cicero worked out such brief notes for his speeches, and that the literary elaboration of a speech, often published several years after it had been delivered, was based on these notes. After Cicero's death Tiro published a collection of such notes [38], and Asconius has made use of them for his commentary on the speeches [39]. It must be realised, however, that such *commentarii*, which will most often have been no more than memoranda, will not normally be relevant for the historian's working methods, and it will also be clear from the above that none of the testimonia discussed indicate this. Consequently, in Livy's case, to resort to such a suggestion must be considered an emergency measure only, and it is indubitably much safer to suppose his method of working to have been not much different from that of other historians.

Turning our attention to Appian, we are faced with a double problem. In the preface to his work, the writer begins with a survey of the Roman Empire and its frontiers, and he points out that its history covers the longest time of all empires, and that it has been described by many writers, Greek as well as Roman. Appian wanted to consider Rome's relationship with the various peoples as a whole, but during his reading he found himself now in one part of the world, now in another, until he had collected the material for the separate accounts, so that, say, everything concerning Carthage formed one coherent description [40]. Then follow the individual books, arranged κατὰ ἔθνη. This is, of course, one

37. There are papyri with such wide spatia above and below the columnae that the editors have supposed the book to have been meant for adding notes, see e.g. the Oxyrhynchus Papyri (ed. Grenfell & Hunt, London 1898 sqq.), vol. I, nos. XIV, XVIII, and XIX.

38. Cf. Quintilian X, 7, 30 sq.

39. Asconius p. 87, 10 (Clark).

40. Does not Lucian (op. cit. Chap. 49) contain a hidden polemic against Appian's scheme? According to the usual dating, Appian's work must have been written immediately before the Parthian war; cf. Schwartz: Griechische Geschichtsschreiber (Leipzig 1957), pp. 361 sq. = RE 2, col. 216, and Gabba: Appiani bellorum civilium liber primus, Introduzione, esp. pp. XIV sqq.

way of writing history, and I shall not dwell upon the deficiencies of the method. Above all, they consist in the fact that any historical situation is clearly presented only when all its aspects are considered, and in Appian such considerations are few and far between, not to mention the deficient chronological system with which he links together the various events. The way he expresses himself can only mean that he has himself arranged the material in this manner, which in turn means that he has taken from the historical literature what, in his opinion, is of significance for the relations of each people with Rome. The simplest way for him to do this must have been to arrange all the material concerning one subject in a special roll. Thus, he has had to work with several *volumina* simultaneously, on the basis of which the final description has been composed.

Appian and his sources present a problem which has been dealt with fairly frequently in connection with the separate monographs that form his work. A comprehensive attempt at a collective evaluation hereof is certainly a desideratum, and no demonstration of any one main source has remained undisputed. From our point of view, this is of minor interest. The plan of the work has practically forced Appian to work with excerpts in various rolls, and the number of the sources he has employed will only serve to underline the difficulty and proportions of his work. Gelzer maintains that Appian, when writing his work, seems to have been well advanced in years and, consequently, that he can hardly have made use of much earlier literature [41]. This argument has no value if we imagine him to have spent a long time working on his ὑπομνήματα. The words of the preface leave the impression of a man who has considered closely the special arrangement of his material, according to a plan which must have been cumbersome for an ancient writer [42].

In the case of Cassius Dio also we can refer to his own words. In Fragment 1 he says: “[I have read] [43] practically all that has been written about them (i. e. the Romans), but I have not included it all in my description, but only what I have myself selected”. For the actual elaboration of the work, the word συγγράφειν is used, for the selection, ἐκκρίνειν. Elsewhere (LXXII, 23,5), he says: “All that has happened from the beginning of the history of Rome till Severus’ death I collected in ten years, and it has taken me another twelve years to write the description”. The literary elaboration is again termed συγγράφειν, whereas the collection of the material is here termed συλλέγειν. If we combine the two statements, we shall find three stages: collection of the material, selection of suitable matter, and the final elaboration. A comparison with Lucian’s description of the process will show that his πράγματα συνάγειν corresponds to Dio’s συλλέγειν, whereas συγγράφειν in Dio corresponds to Lucian’s elaboration. Dio does not mention any intermediary ὑπόμνημα, but I cannot share Fergus

41. Cf. Gnomon, 1959, p. 180, review of Gabba, op. cit.

42. It is probable, however, that Ephoros planned his material in a similar way; cf. Jacoby: *Fragmente der Griechischen Historiker*, vol. C 2, p. 26 sq.

43. ἀνέγων is a supplement by Bekker, accepted by most later scholars.

Millar's cautiousness here (44). By translating συγγράφειν "write down" he sees only two stages as mentioned by Dio. The selection of suitable matter, referred to as ἐκκρίνειν, I do not hesitate to consider a separate stage. We then get the following procedure: reading and excerpting with transcribing on the rolls of the, perhaps roughly sorted, excerpts; a selection of the material in the form of a ὑπόμνημα; and, on this basis, the elaboration of the historical description. In his foreword (12), Appian uses the words συνάγειν τὰ μέρη about the arrangement of his material κατὰ ἔθνη, whereas the elaboration made by other writers, as well as by himself, is called συγγράφειν. Although, in this connection, we must combine the statements made by various writers about their working methods, the result is extremely reasonable. Not until we consider the whole procedure with the ancient book roll in mente do we get a clear image of how it may have been done. True enough, this gives us two preparatory stages which may be called ὑπόμνημα/commentarius, but this is hardly a difficulty. Historiography is literary in a way quite different from the scholar's treatise, and that is just why a special selection is made from the immense volume of raw material prior to the final literary elaboration. If we read e. g. Pliny, it is easy to see that just this last stage has been of minor importance to him, so that his Natural History becomes more like the historian's selected material before the literary finish [45]. The fact that commentarius/ὑπόμνημα is thus not an unambiguous term in the works of the ancient scholars, is not surprising when we consider how many different aspects these words cover.

Although much of this must be hypothesis, it is hardly quite unimportant to discuss these problems once more. The practical difficulties that confronted the ancient scholar, have also left their mark on his final work. The difficulties connected with the use of literature were considerable compared with ours, and the apparently wide-spread practice of excerpting while reading—usually reading aloud—made necessary transcribed and systematically arranged collections of excerpts for private use. As is so often the case in the writings preserved, this was a matter-of-course procedure, and therefore rarely mentioned. We have but occasional glimpses of the scholar at work. Moreover, we have to take into account an unknown quantity, in that the ancient rhetorical training included a mnemonic training unknown to us. This makes it difficult to decide with certainty when a writer quotes on the basis of excerpts, and when he relies on his memory. The majority of the poetical quotations may well have been memorized, but in the case of long quotations or paraphrases of technical or historical works, it is safer to assume that the writer has availed himself of notes.

In the light of the working method, outlined in the above, which was probably commonly used by many educated writers [46], it is perhaps easier to under-

44. A Study of Cassius Dio (Oxford 1964), pp. 32 sq. For further literature on Dio see this work.

45. Cf. RE 21, 1, col. 436, where the "hypomnematische Charakter" of the Natural History is discussed.

46. Cf. Chap. VI, note 49.

stand how e. g. Cicero's numerous philosophical writings were composed within such a brief span of time. Nor is Varro's prolific output improbable if we imagine him to be reading and excerpting whenever duty permitted. Consequently, the exaggerated desire to find a "main source" should be curbed. This method of working greatly increases the contamination of sources, and the provenance of the individual excerpt may well be forgotten, so that it slips into a new context, and, torn from its original connection, may be given an entirely new meaning. As this happened to "the most learned of all Romans", it could, no doubt, have happened much more easily to minds less well trained. Only in rare cases—as in Varro's use of Theophrastus in the treatise being considered here—can we see what the relationship between authority and excerptor may be. In numerous other cases we can establish the use of a common source, but to name the author of that source, let alone to reconstruct it, is but rarely our lot. After all, only an infinitesimal part of the ancient technical and historical literature has been preserved.

VIII

VARRO AS A SOURCE

When dealing with Varro's sources, the present investigation has dissociated itself from an over-pedantic and critical evaluation, and has joined Münzer in his fundamental conception of the source problem in ancient writers. This is, of course, not tantamount to declaring any futility in an examination of the problem of Varro as a source, i. e. the question of how far the modern scholar may trust what has been handed down through the sieve of Varro's writings. If such an examination were indeed futile, any historical research, other than into the history of erudition, would be impossible. More likely, an attempt at an evaluation on a wider basis of Varro's working method should make it possible to estimate with greater accuracy the reliability of his researches. Ancient agricultural science should indeed present us with the best possible field in which to consider such an appraisal, thanks to the volume of parallel tradition preserved, enabling us to check a number of points. Roman agriculture must be considered one of the aspects of ancient civilization best known to us.

It has previously been maintained (p. 9) that Varro must be considered to have had ample qualifications for writing three books on agriculture. Generally, a member of the Roman aristocracy was quite familiar with country life, and we must take it that Varro also spent a great deal of his childhood and youth in the country [1], and that later on in his life he used to spend such time at his *villae* as his duties permitted. Local patriotism and love of his native soil seem to have led him to emphasize the "Sabine element" in earlier Roman civilization, particularly in the fields of language and religion [2]. The setting of the dialogues is a discussion among a group of Roman squires, who no doubt formed the majority of the Roman upper-class.

Considered in this light, we cannot but wonder that Varro approaches his subject in a roundabout way. It is not surprising that this procedure has been assigned to a "Stubengelehrter" of no practical experience. The present writer must maintain the opposite to be the case. In spite of his being familiar with

1. Cf. the fragment from the "De Liberis Educandis" (Bolisano No. 19), which is generally considered to be a reference to Varro's own childhood: "mihi puero modica una fuit tunica et toga, sine fasceis calcamenta, ecus sine ephippio, balneum non cotidianum, alveus rarus".
2. See esp. Jean Collart, *Varron*, pp. 229 sqq., and K. Latte: *Römische Religionsgeschichte*, pp. 4 sq.

country life and the daily work of the farm, Varro also followed his usual practice when writing this treatise, describing agriculture both as “ars” and “scientia”, with subdivisions, systematic groupings, etymologies and all the other features which were the usual marks of his learned writings. Also, at the age of eighty, he may not have occupied himself with daily practical work of the farm for some time, a fact which would make it natural for him to approach it in this odd theoretical way.

Varro’s knowledge of agriculture was not so profound either as to prevent him from making mistakes. Let us briefly consider the most important of these, such as have been pointed out already in the above.

Varro has put some of the farm operations at the wrong time, e. g. the planting of thyme and lily (cf. p. 49 sq.), or of suckers and layers (cf. p. 81). These mistakes are evidently due to a careless use of his source, in one case the agricultural calendar, in the other an excerpt. On the same grounds, the information about the rotation of crops in Olynthos must be said to be misleading (cf. p. 74). Further, the description of grafting and shield budding is so confused that it leaves a very distorted picture (cf. pp. 82 sqq.). This is due to Varro’s passion for the fourfold division, even where it confuses the description. These actual mistakes which we can point out, are not numerous, and they are even concentrated within a very few subjects. Grafting is beyond doubt a job for the expert, and we have seen that the more specialized operations, such as the pruning of trees and the weeding of fields, are omitted. No doubt Varro’s technical knowledge has left him with no opportunity of giving a proper description of the execution of these operations.

Of a more serious nature than these factual errors is the fact that certain parts of agricultural science are actually distorted by Varro, as has been proved in connection with the “genera vinearum” (cf. p. 28 sq.), or the instances where the information is so deficient as to leave the reader completely in the dark. Deciding the quality of a soil, and the requirements of cultivated plants in the way of soil and locality, are such important matters that one might expect a manual on farming to tell the reader about them. It is characteristic that Varro registers the problems, but avoids discussion and direct instruction (cf. pp. 13 sqq.).

In spite of these considerable deficiencies, Varro’s treatise does present us with a useful view of farming. We have seen—particularly in the use of exemplification—how many local characteristics are mentioned *en passant*, and these non-committal digressions especially leave us with the impression that Varro is much better versed in his subject than is suggested by his systematic description. Reference will be made here only to his remarks on the number of ploughing operations (cf. p. 51, note 25), and the repeated *saritio* (cf. p. 53, note 29). A discussion of this naturally belongs in the agricultural calendar, where Varro was tied by his main source and did not take the time to co-ordinate different sources, or in the part of Stolo’s discourse on the “gradus praeparandi” which confines itself to exemplification.

On the other hand, in the general reflections on agricultural conditions, including labour, profitability, size, etc., Varro appears, on the face of it, a very reliable authority. These are problems which necessitate no technical insight, just a landowner's common sense. It is very characteristic that whereas the earlier, more dogmatic scholars—represented especially by Gummerus [3]—are sceptical, neither Rostovtzeff [4] nor Tenney Frank [5] make reservations when using the treatise. Here Varro, being a landowner, was a competent writer, even though we would have preferred some more discussion of these subjects.

The result is that when Varro is able to base his criticism and judgement on his own experience, he seems reliable, but when he moves on a theoretical level only, and has to trust his reading, matters are different. Here his encyclopedic haste proved a serious defect, and neither his own reading nor his written elaboration were sufficiently careful.

With some caution, we should be able to apply these findings to Varro's other writings and the historical value we can attribute to a number of his works. Many of them certainly contained valuable observations, especially those based on his own great experience, gathered in the course of an eventful life [6]. On the other hand, we must justly question the historical value of his voluminous antiquarian writings. In this respect, laborious study of sources, meticulous comparison, and great caution were necessary. And even with all this, great discretion would be needed in the literary elaboration, and especially in the principles of classification applied. These are qualifications which we cannot attribute to Varro. Even though he may have gathered all the relevant material, we cannot count on the final result of his research being satisfactory, in the sense that it shows "wie es eigentlich gewesen ist". For this, his working method, as we have studied it here, represents too many potential sources of errors. Let us briefly sum up these sources:

We dare not always trust Varro to have given a correct account of the sources he used, and in some cases he has, no doubt, found and used corrupt or reconstructed sources [7]. Here, however, we must remember that, at least in his works on literary history, Varro was much concerned in the discussion on authenticity, and his rejection of a very large part of the Plautine corpus is evi-

3. Op. cit., esp. p. 72.

4. *Social and Economic History of the Roman Empire*(2) (Oxford 1957), p. 30 with note 25; cf. also pp. 62 sq. and passim.

5. *An Economic History of Rome*(2) (New York 1962), p. 100; cf. *An Economic Survey of Ancient Rome*(2) (New Jersey 1959), pp. 358 sqq.

6. In this connection we may think especially of the writings *De Pompeio*, *Legationum Libri*, *De Sua Vita*, *Commentarius Isagogicus ad Pompeium*, *Ephemeris Navalis ad Pompeium*, and possibly other geographical works.

7. It is a well-known fact that the discussion on the authenticity of the indirectly preserved sources for earlier Roman religion and history is one of the problems that still divides scholars. I shall here refrain from referring to a literature which reflects almost as many viewpoints as there are scholars. In principle the problem must probably be regarded as insoluble as a whole.

dence of a highly developed critical sense—but it would certainly have been of great importance for us to know more about the criteria on which he rejected the pseudo-Plautine writings [8].

The explanation and commentary with which Varro provided his sources, were, no doubt, better than our commentary on the calendar, which was hardly a mystery to the ordinary reader. But we must again emphasize that etymology used as an explanation of words was a most common method, and Varro's linguistic imagination could easily find a likeness that would provide him with the explanation he was looking for. I shall here mention the etymologies—and thus the historical/antiquarian explanations—only of the words “consul” and “praetor”: “consul nominatus qui consuleret populum et senatum . . . pr⟨a⟩etor dictus qui praeiret jure et exercitu” (De Ling. Lat. V, 80). Of these explanations, the former is certainly wrong [9], whereas the latter is correct—though we can hardly look upon the praetor as originally “praetor jure”, but he was almost certainly “praetor exercitu” [10]. Through a false analogy based on contemporary practice, a correct etymology becomes an incorrect antiquarian explanation. Although Varro's etymologies in some cases are correct, they must be considered among the most dangerous sources of wrong conclusions and interpretations, and this is just the point on which he set a precedent.

As far as his systematization is concerned, I refer again to the combination of the four seasons and the eighth intervals (cf. p. 45 sq.). It may serve as a typical example of the way two incompatible phenomena are combined, and the discussion that has gone on since Mommsen about this question is a characteristic sort of derailment that has afflicted later generations' treatment, entirely due to Varro's desire to systematize, even when it is detrimental to the description. Consequently, it is easy to imagine how Varro, even from a number of correct details, can construct an incorrect whole.

A. Momigliano has very aptly described the difference between the historian and the antiquarian thus; the former writes chronologically, the latter systematically. He says: “When a man writes in a chronological order, but without explaining the facts, we call him a chronicler; when a man collects all the facts available to him but does not order them systematically, we set him aside as muddle-headed.” [11] It would certainly be too hasty a conclusion to refer Varro to the latter category, but the systematization applied, being quite foreign to the contents, must have distorted the image of early Rome that Varro created on

8. For the *De Comoediis Plautinis*, see Dahlmann, RE Suppl. 6, col. 1225, with references to further literature.

9. Numerous etymologies have been suggested, see Ernout & Meillet: *Dictionnaire étymologique de la langue latine*, in which Mommsen's derivation from “salio” is mentioned only in passing; cf. K. Hanell: *Das altrömische eponyme Amt* (Lund 1946), pp. 204 sqq.

10. The functions of the archaic praetor are extremely doubtful. At any rate, Varro's definition of the office seems to be a fairly late explanation.

11. *Ancient History and the Antiquarian* (Journal of the Warburg and Courtauld Institutes, vol. XIII, p. 287).

many crucial points. Hardly any modern scholar will question this [12]. However, the position is that we do not know Varro's final picture, only extremely incomplete fragments of his research. Whereas Dahlmann as his followers attach the greatest importance to the reconstruction of the lost writings [13], the scholars who are attempting a reconstruction of the history behind Varro must realise that a reconstruction of Varro's writings does not necessarily bring historical information on the subjects Varro described. When we find that information which is handed down by later tradition is derived from Varro as the intermediary link, such information does not therefore acquire any greater reliability. Quotations indirectly transmitted through Varro may have become distorted. Just imagine the situation that would arise if Cato and Theophrastus were lost, and had to be reconstructed on the basis of the quotations and paraphrases introduced by Varro in our treatise! Indeed, trying to establish the likelihood of Varro as a link of the indirect tradition can, in fact, mean that one is introducing a new factor of uncertainty into the evaluation of a source.

Thus, Varro's importance is ascribable, not to the results of his research, but to the great volume of material he collected. Of the quality of this material we know too little, as most frequently we possess neither Varro nor his source, or at most a chance reproduction—and often in a much later author. The present examination must conclude that the antiquarian tradition in general should be treated with scepticism. A single example from recent research will prove this. In our tradition, early Roman numismatics appears as a strange confusion of testimonia from a number of writers, often contradicting each other [14]. No one has succeeded in arranging this contradictory information in a general picture which will show the interdependence of these writers. Only an examination of the numismatic material will successfully sort our correct information from incorrect. The Romans did not mint coins until the third century B. C., and after a little less than a hundred years a standard unit was agreed on, the *denarius*, which was to dominate the following centuries. In spite of this, ancient research never succeeded in unravelling the earlier development. How much less chance, then, did this same research have of throwing light on the institutions of earlier history?

12. For the history of religion see K. Latte, op. cit. p. 5 sq., who strongly distrusts Varro and the turning which ancient studies took through him. Within the secular history it is almost strange to note the extent to which the adoption of any attitude to the antiquarian tradition is avoided, although it has undoubtedly greatly influenced the historiographical tradition. For example, we find no mention of it in Hermann Bengtson: *Einführung in die Alte Geschichte* (Munich 1949 and later).

13. Cf. p. 7.

14. For the entire discussion I refer the reader to Rudi Thomsen: *Early Roman Coinage* (Copenhagen 1957 sqq.). The testimonia are conveniently collected in vol. I, pp. 19 sqq.

VARRO AND CAESAR'S LIBRARY

In the brief section of Suetonius' *Life of Caesar* devoted to the Dictator's building activities, we read among other things (Chap. 44): "bibliotecas Graecas Latinasque quas maximas posset publicare data Marco Varroni cura comparandarum ac digerendarum". We do not know for certain when this task was entrusted to "the most learned of all Romans", but it cannot have been earlier than the autumn of 47, or perhaps not until the following year [1]. Caesar's plan was not realized. The reason is, no doubt, to be found in the disturbances after the Idus Martiae and the financial distress that characterized the following years. Thus, Varro can hardly have acted as librarian in the proper sense of the word. Ritschl [2] has already suggested that it was this task which inspired Varro to write the three books *De Bibliothecis* mentioned in Hieronymus' catalogue. Consequently, it is not surprising that the actual construction had hardly begun before Caesar's death. The first public library in Rome was founded in the Atrium Libertatis by Asinius Pollio [3], who decorated it with statues of famous writers. Pliny tells us that Varro was the only writer still living who enjoyed the honour of being thus immortalized [4]. Therefore, the inauguration of the library must have taken place before his death, and probably during the reign of the *Triumvirs*.

Many things suggest that Pollio's library carried on Caesar's original plan, and that Caesar too had had the Atrium Libertatis in mind for the purpose. As early as 54 we learn from a letter of Cicero that Caesar has begun large purchases of land to extend the Forum "usque ad Atrium Libertatis" [5]. How soon the plans for Caesar's Forum were completed, we cannot say with certainty, but in the opinion of most modern scholars it was, in inspiration, unmistakably oriental-

1. Dahlmann, *RE Suppl.* 6, col. 1178, suggests 47. whereas Broughton, *op. cit.* p. 314, places the appointment in 45. However, in 47 Caesar is in Rome for a few months only, viz. October–December. In 46, on the other hand, the great triumph is celebrated, and a number of administrative reforms are laid down, including that of the calendar.
2. *Die Schriftstellerei des M. Terentius Varro, Opuscula Philologica III*, p. 415. The suggestion is made in the most cautious form possible, but it has been generally approved; cf. Dahlmann, *RE Suppl.* 6, coll. 1221 sq., and Della Corte, *op. cit.*, pp. 133 sq., with note 19.
3. J. André convincingly combines the scattered information handed down to us; see *La Vie et l'Oeuvre de C. Asinius Pollion* (diss. Paris 1949), p. 117 sq.
4. *Nat. Hist.* VII, 115.
5. *Epist. Ad Att.* IV, 16, 8.

hellenistic [6]. The obvious thought is that the model of Caesar's library was no less than the library of Alexandria, one of the most foremost centres of learning in Antiquity, and that the erection of the library close to the new Forum was an expression of a deliberate cultural policy. This also shows clearly the pattern behind the appointment of Varro as the head of the institution. The septuagenarian polyhistor was probably the Roman who approached nearest to the great Alexandrine scholars in learning, and who was considered the best promotor of a Roman university of this kind [7].

Augustus does not seem to have continued the scheme. Instead of concentrating all his efforts on this one library, we know that he had another established in the Porticus Octaviae under C. Melissus, the grammarian, and a third on the Palatine, of which the freedman, G. Julius Hyginus, was in charge. A characteristic feature common to both these librarians was their low social standing [8]. The idea underlying the new libraries may have been Augustus' wish to weaken Pollio's influence. This old Antonian never got used to the new rule, as we know [9], and an intellectual leader of his type—and in the library in the Atrium Libertatis at that—could be an unpleasant, if harmless, opponent [10].

Our sources hardly allow us to reconstruct with certainty any actual "Kulturkampf" under Augustus. Let it suffice here to say that whatever Caesar's plans for the library, Rome never became the centre of learning Alexandria was, and the library at the Atrium Libertatis never a Museion. Nor did Varro ever have any actual successor, nor was he to found a school, in the sense that the antiquarian studies he was one of the first to pursue, became an incentive for coming generations to revise his results through new fundamental research. Our knowledge of antiquarian scholarship after Varro is meagre. In spite of names of writers and books [11], it is probably impossible to write its history. A general feature seems to have been that the ancient learned method, excerpting, in many respects strangled independent and critical research. Varro was not discussed or refuted, he was excerpted. Because of his wide reading and prolific writing he became an authority, to whose works scholars turned for information. His style was too unpolished to command a large circle of readers, but later encyclope-

6. For the literature on Caesar's Forum I refer the reader to Th. Hastrup: *Forum Julium as a Manifestation of Power*, *Analecta Romana Instituti Danici* II, 1962, pp. 45 sqq.
7. Cf. Ed. Meyer, *Caesars Monarchie und das Principat des Pompejus* (Berlin 1918), p. 492 sq. This interpretation does not seem to have been generally accepted and is not mentioned by Gelzer: *Caesar* (3) (1941), cf. p. 331.
8. Cf. Suetonius *De Ill. Gramm.*, Chap. 20 and 21.
9. R. Syme: *The Roman Revolution* (Oxford Paperback 1960), pp. 320, 482, and 512.
10. Antiquarian interests could also be used politically; cf. Ateius Capito's letter concerning Antistius Labeo (Gellius XIII, 12, 2): "sed agitabat hominem libertas quaedam nimia atque vecors usque eo, ut divo Augusto jam principe et rempublicam obtinente ratum tamen pensumque nihil haberet, nisi quod jussum sanctumque esse in Romanis antiquitatibus legisset"; cf. also Syme's description of Labeo, *op. cit.* p. 482. For Livy's relationship to Augustus, see the remarks of Walsh, *op. cit.* pp. 10 sqq.
11. Cf. Bardon, *op. cit.* vol. II, pp. 110 sqq.; 147 sqq.; 178 sqq.; 262 sqq.

dists—e. g. Celsus—wrote refined Latin. The contents of the works of the encyclopedists became gradually more and more insipid, and it is in this light that we must understand e. g. Augustine's enthusiasm when he reverted to Varro's own writings [12].

The greatness of Varro is thus to be found both in his own achievement, and in the fact that succeeding generations accepted the results of his research more or less uncritically. Had Caesar's supposed plan of a research centre in Rome succeeded, Varro might have become to posterity its great founder and promotor, and our knowledge of ancient Rome might have been different.

12. For assessments of Varro in Antiquity, see Dahlmann, RE Suppl. 6, col. 1179.

DANSK RESUMÉ

Forbemærkninger, hvori der kort redegøres for problematikken vedrørende studiet af den romerske polyhistor Marcus Terentius Varro. Hans talrige skrifter, der har været en hovedkilde for senere romerske skribenter, er nu tabt med undtagelse af de tre bøger om landbrug samt bøgerne V–IX af *De lingua Latina*. Forskningen har især beskæftiget sig med sidstnævnte samt med rekonstruktionen af de nu tabte skrifter, af hvilke en række fragmenter er bevaret. Nærværende arbejde vil søge at klarlægge Varros videnskabelige arbejdsmetode, som den fremgår ved en analyse af første bog af skriftet om landbrug, hvori behandles agerdyrkningen i forbindelse med en normal romersk villa rustica.

I. Struktur gennemgår opbygningen af I. bog og dens strukturering af emnet, hvorved iagttages nogle ejendommeligheder. Bogen, der er en dialog, falder i to skarpt adskilte dele med hver sin hovedtaler. Først deler *Scrofa* »agri cultura« i fire dele (partes), der hver spaltes i to (species). Skønt man herefter kunne vente en fortløbende skildring af emnet disponeret efter disse otte punkter, følger foredraget ikke denne plan. Der sker ombytninger af afsnit, nye emner inddrages, noget behandles udførligt, andet berøres kun flygtigt. Dette gælder også – omend i mindre grad – bogens andet afsnit, hvor *Stolo* skildrer landbrugsarbejdet fra forberedelse til såning og plantning lige til fremdragning af de opmagasinerede produkter. Denne skildring falder i seks trin (gradus), og skønt dispositionen holdes, præges skildringen inden for hvert trin også her af stor ujævnhed. Undervejs er der konstateret enkelte typiske måder at behandle enkeltfænomener på, nml. analyse, eksemplificering samt kommentering af en given tekst, en kalender over arbejdsgangen på en gård året rundt, som efter forfatterens mening er en kalender, der har foreligget som arbejdsplan for arbejdet på en bestemt gård, muligvis en af Varros egne. Endvidere er det konstateret, at Varro i en række tilfælde citerer og parafraserer sine forgængere. Disse sider af Varros arbejdsmetoder undersøges i det følgende nøjere.

II. Analytisk metode. Scrofas foredrag er strengt analytisk disponeret, men dispositionen går på en række afgørende punkter i stykker. I dette kapitel undersøges først to eksempler på analyse af typen genus/species og derpå analyse ved multiplikation, ekshaustiv analyse. Af begge typer gives eksempel på velgennemført analyse og på mindre velgennemført, hvor resultatet er, at der skabes større forvirring end klarhed vedrørende det behandlede fænomen. Endelig gives eksempler på definitorisk analyse, der hos Varro ikke tjener til at definere et ubekendt fænomen, men snarere virker som en lidt pedantisk udpensling af

selvfølgeligheder. Resultatet af undersøgelsen er, at Varro må have arbejdet med den største hast og knap nok have taget sig tid til at gennemlæse og revidere sit manuskript.

III. Eksemplifikation. Hyppigt illustrerer Varro de behandlede fænomener med eksemplifikationer, der i dialogens forløb indføres i argumentationen på forskellig vis. Geografiske eksemplifikationer giver indblik i landbrugsmetoder i de forskellige dele af Italien samt i en række provinser. Botaniske eksemplifikationer drager paralleller mellem vilde planter og nytteplanter. Begge typer eksemplifikation synes ret tilfældigt spredt ud over foredragene, ofte uden egentlig sammenhæng med udredningen af det emne, der skal illustreres, men snarere som lærde digressioner. På samme måde indføres sproglige varianter, særlige bondeudtryk, *termini technici* o. l. som eksemplifikationer. Endelig findes der eksemplifikationer, hvor såvel demonstrans som demonstrandum ligger inden for det praktiske landbrug. Her synes det karakteristisk, at eksemplifikationerne tjener til at give en kort, næsten tabelagtig oversigt over et større emne. En sammenligning med Catos inventarlister (agr. 10 og 11) viser, at denne type netop tjener til reduktion af et materiale. Det konstateres endelig, at Varro ikke altid viser lige stor skønsomhed i valget af de emner, der således behandles på den kortest mulige måde.

IV. Landbrugskalenderen og den filologiske metode. Først søges påvist, at den landbrugskalender, Varro bringer kap. 29–36 incl., er en såkaldt naturkalender, hvis formål det er at præcisere de tidspunkter, hvor de enkelte landbrugsarbejder skal udføres. Når romerske bønder ikke anvendte det borgerlige år, er det navnlig fordi det præjulianske år ikke var i trit med solåret og følgelig ikke kunne bruges inden for agerdyrkningen. Dette har allerede Mommsen påvist, men i modsætning til andre kronologiske fremstillinger hævdes det her, at denne type kalendere, der kendes fra talrige egne af kloden, i den hos Varro overleverede form er en oprindelig romersk kalender. Når forskningen har sat den i forbindelse med græsk astronomi, skyldes det især, at Varro i sin systematiseringstrang selv sætter den i forbindelse med det julianske års fire årstider, således at kalenderens otte intervaller kunne opfattes som fremkommet ved en deling af disse. Herved har Varro opnået en af de skildrede analytiske opstillinger af et fænomen. Den egentlige kalender består af otte kapitler, der hver skildrer arbejdet i eet interval. To af kapitlerne udviser sproglige og reale ejendommeligheder, der gør det naturligt at antage, at de til dels har optaget stof fra en anden kalender, og ved denne sammenarbejdning af to kilder er der opstået fejlplaceringer af landbrugsarbejder. Følgelig efterprøves samtlige Varros placeringer af landbrugsarbejder ved en sammenligning med tilsvarende oplysninger i Columellas landbrugskalender i XI. bog, og det konstateres, at Varros oplysninger i almindelighed synes rimelige. Enkelte større divergenser kan forklares landbrugsteknisk. Dog synes vigtige landbrugsarbejder udeladt ved uagtsomhed, og det er karakteristisk, at flere arbejder, hvortil der alluderes i eksemplifikationer, ikke er medtaget. Den oprindelige kalendertekst er forsynet med en kommentar, der sprogligt let lader sig udskille fra selve kalenderen. Kommentaren deles i tre typer: 1) side-

bemærkninger, mest til begrundelse af placeringen af det pågældende landbrugsarbejde, 2) ordforklaring el. definition, 3) etymologi, der kan anvendes alternativt eller evt. ved siden af 2). Flere gange defineres et ord for snævert, også i forhold til Varros egen terminologi. Der defineres også en række ord, der ikke er nødvendige for forståelsen af kalenderteksten, medens mange fænomener slet ikke kommenteres. På samme måde etymologien. Her er det interessant at se eksempler på ord, hvor der gives forskellige etymologier i Varros forskellige skrifter, og der fremdrages eksempler på, hvordan hele konteksten kan fremkalde en bestemt etymologisk forklaring, der i anden sammenhæng ville være utænkelig.

Den filologiske kommentar vidner således også om Varros hastværk, men giver samtidig et klart billede af, hvordan navnlig etymologien kunne springe frem under arbejdet.

V. Varro og faglitteraturen. Dette problem er hyppigere blevet behandlet, og følgelig gives en kort forskningsoversigt. Navnlig Oskar Hempel har hævdet, at Varro ikke citerede efter de angivne kilder, men havde de fleste citater på anden hånd fra ganske få forlæg. Til at bevise dette benyttede han navnlig sammenhængen mellem Varro og Theophrasts botaniske værker. Hver gang der var en modsætning mellem de to forfattere, forklaredes den ved at Varro havde misforstået sit forlæg. Da Varro ofte i ordvalg ligger ganske tæt op ad Theophrast, men på afgørende punkter alligevel ikke er i overensstemmelse med dennes lære, sluttede Hempel, at der forelå en indirekte tradering. Ved en gennemgang af Hempels materiale søges påvist, at Varro vælger det ud af botanikerens værk, der passer ham, hvad enten det drejer sig om forskningsresultater, led i argumentation, eller anskuelser, som Theophrast søger at refutere. Andetsteds har vi eksempler på, at en notits fra Theophrast er anbragt i en gal sammenhæng, så at der opstår reale fejl. Da vi netop træffer en række fejl og misforståelser i eksemplifikationer og analytiske udredninger, kan vi ikke tilskrive nogen tabt landbrugsforfatter disse, og vi må følgelig slutte, at Varro selv har benyttet Theophrast. På en række punkter kan det sandsynliggøres, at fejlene lettest kan tænkes opstået ved simpel ombytning af excerpter.

Da Hempel sluttede analogt fra den indirekte Theophrastbenyttelse til en indirekte anvendelse af en række andre forfattere, må nærværende undersøgelse konkludere i den modsatte opfattelse. Der er intet bevis for, at Theophrast eller nogen anden citeret forfatter er benyttet indirekte, og følgelig må man slutte, at Varro har læst og benyttet de forfattere, der citeres. I den opfattelse af den antikke videnskabsmands omgang med skriftlige kilder, der anlægges i kapitlet, er forfatteren helt på linje med Münzers principielle betragtninger i hans »Beiträge zur Quellenkritik der Naturgeschichte des Plinius«.

VI. Varro som forfatter. Efter en kort rekapitulering af undersøgelsens hidtidige forløb sammenlignes resultaterne med vor øvrige viden om Varros forfatterskab, navnlig de bevarede bøger af *De lingua Latina*, og det vises kort, at Varro i mange måder her anvender tilsvarende arbejdsmetoder. Navnlig vedrørende den systematiske analyse af et emne viser der sig slående paralleller, der tidligere er beskrevet af Dahlmann, men i nærværende undersøgelse antages det,

at Varros foretrukne skema er opstået inden for rhetorskolen, og at Varro, når han skal skildre et emne, bevidst eller ubevidst disponerer efter et velkendt skema fra skolens undervisning, uanset om dette passer til det pågældende emne. Hans store flid og encyclopædiske interesser gav ham ikke tid til at vælge den form, der passede til emnet. Når hans fremstilling forekommer fremmedartet, skyldes det ikke – som ofte hævdet – at Varro var en stuelærd. Tværtimod viser hans biografi – i det omfang den er kendt – at han, hvad karriere angår, var en typisk repræsentant for den romerske senatorstand, og først i en fremrykket alder, da konsulatet var uden for rækkevidde, vendte han sig mod videnskaben. Varro må vurderes som en videnskabelig amatør i dette ords bedste forstand.

VII. Den romerske lærde. Det konstateres, at excerpering var en udbredt arbejdsform, og med udgangspunkt i Den yngre Plinius' skildring af onkelen (epist. II, 5) søges klarlagt, hvordan de romerske lærde har arbejdet med deres excerpter, der i regelen må tænkes systematiseret på en eller anden måde. Som eksempel på en forfatter, der ikke synes at have anvendt nogen form for systematik, nævnes Aulus Gellius, medens Plinius den Ældre må have arbejdet anderledes, idet det antages, at excerpterne er blevet systematiseret, samtidig med at de blev renskrevet og overført fra tavle til rulle. Excerpteringsteknikken er sikkert græsk, i alle fald anvendt af de alexandrinske lærde. Som eksempel på en græsk videnskabsmand diskuteres Plutarch ud fra nogle af de få testimonier om hans arbejdsmetode, vi finder i hans egne skrifter. Svarende til Plinius' renskrevne excerpter, af nevøen kaldet *commentarii*, taler Plutarch om sine *hypomnemata*. Herefter tages stilling til den stående diskussion om disse to ords betydning og mulige identitet på latin og græsk, navnlig som *terminus technicus* inden for historieskrivningen. Den terminologiske overensstemmelse mellem de to ord – som de bruges af Cicero og Lukian – tyder på, at også historieskriverne har arbejdet med excerpter på en måde, der minder meget om de skildrede videnskabsmænds metode. Herefter skitseres kort, hvorledes man kunne forestille sig tre af kejsertidens historikere arbejde, nml. Livius, Appian og Cassius Dio.

Konklusionen bliver, at den skitserede arbejdsform i høj grad gør det nærliggende at antage, at der i vid udstrækning foreligger en kontamination af kilder i vor historiske og videnskabelige overlevering, således at man næppe kan påregne at kunne rekonstruere nu tabte primære kilder på baggrund af de senere benyttedes værker.

VIII. Varro som kilde. Undersøgelsens mål kan til en vis grad siges at være at nå til et klarere billede af den vidneværdi, vi kan tillægge Varros skrift. Det konkluderes, at Varro i I. bog af r. r. viser sig som en pålidelig kilde på de områder, hvor han gennem egne erfaringer kan udøve kritik og jugement. Hvor han på grundlag af læsning og excerpering søger at skildre mere tekniske enkeltheder, kommer han derimod hyppigt til kort, ikke blot på grund af hastværk og uagtsomhed med kilderne, men også på grund af sin trang til at systematisere. Dette må med forsigtighed kunne appliceres også på den vidneværdi, vi kan tillægge de øvrige skrifter. Navnlig hvad angår de antikvariske værker, synes der at være grund til forsigtighed. Man kan ikke være sikker på, at han trofast gengiver

sine kilder – af hvilken værdi de end har været – langt mindre påregne, at hans systematisering af materialet har skabt et blot nogenlunde sandfærdigt billede af objektet. Ud fra den moderne historikers opfattelse har det således udelukkende lærdomshistorisk interesse at rekonstruere de tabte varronske skrifter, og ikke engang et gennem Varro indirekte overleveret citat af en ældre forfatter kan i alle tilfælde gøre krav på at blive betragtet som autentisk.

IX. Varro og Caesars bibliotek. Caesars plan om at skabe et stort bibliotek i Rom opfattes som inspireret af biblioteket i Alexandria, hvorved det føles naturligt, at just Varro, »den lærdeste af alle romere«, blev bibliotekets første leder. Idus Martiae udsatte gennemførelsen af planen, men hverken Asinius Pollios bibliotek eller de augustæiske blev et modstykke til universitetet i Alexandria. Romerne fik aldrig et universitet, og Varro blev ikke den første af en lang række fremragende lærde, der diskuterede og uddybede hans resultater. Eftertidens store beundring for Varro må i nogen måde forstås på denne baggrund.

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